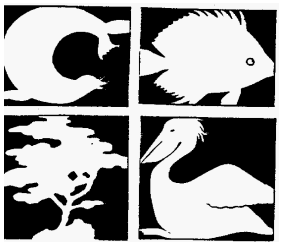
ISCAS '98



The 1998 IEEE International Symposium on Circuits and Systems

Advance Program
May 31 - June 3, 1998
Monterey Conference Center
Monterey, CA

For the latest information,
please check out the website at:
http://www.iscas.nps.navy.mil

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Welcome to ISCAS' 98 and Monterey

On behalf of the Organizing Committee, it is our pleasure to invite and welcome you to the 1998 IEEE International Symposium on Circuit and Systems (ISCAS'98), to be held in the beautiful and historic city of Monterey, California. The 1998 ISCAS, sponsored by the IEEE Circuits and Systems Society and hosted by the Naval Postgraduate School of Monterey, CA, will be held at the Monterey Conference Center in conjunction with the Monterey Marriott and Doubletree Hotels, from May 31 through June 3, 1998.

The technical program this year consists of 97 sessions that cover a broad range of technical subjects. Among these are 16 Special Invited Sessions that have been organized and selected to bring you the most current thinking and research results in the field. Two panel discussions on Education and Government sponsored research, along with three plenary presentations are also planned. In addition to the regular technical program, 13 specially organized short courses are scheduled on Sunday, May 31, preceding the start of the regular program.

A number of social events are planned throughout the conference, including a Welcoming Reception on Sunday evening, a conference reception and concert at the Naval Postgraduate School on Monday evening, and a Banquet at the Monterey Bay Aquarium on Tuesday evening. Additionally, spouse and dependent activities are also organized which include a bus tour of Monterey, Pebble Beach, Carmel, Big Sur and a wine tasting tour to Carmel Valley.

The conference is an excellent opportunity for researchers to meet in a relaxing and stimulating environment. Apart from the beauty of its coastline, the Monterey Peninsula, situated in central California (2 hours south of San Francisco), is the habitat of a rich wildlife. Sea otters, sea lions and migrating whales can be seen in their natural settings.

The Monterey Conference Center with the Monterey Marriott and Doubletree Hotels, the venue of ISCAS'98, are located in downtown Monterey a few minutes walk from the Fisherman's Wharf and Cannery Row with their numerous restaurants, the beach and the main attractions of Monterey. Other close attractions like the 17 mile drive with its world famous Pebble Beach golf courses and Carmel-by-the-Sea with its European style boutiques, are within a short drive. They will conspire to pull you away from the Symposium, but you will heroically resist.....most of the time.

We sincerely hope you enjoy your visit to Monterey, and you will remember both the technical and social aspects of ISCAS' 98 as a pleasant and worthwhile experience.

Sherif Michael
General Chairman
ISCAS '98

Stanley A. White
General Co-Chairman
ISCAS '98

Message from Technical Program Co-Chairs

On behalf of the Technical Program Committee, it is our pleasure to introduce the Technical Program for ISCAS'98. This program represents the integrated efforts of many individuals, namely, the authors, special session organizers, reviewers, and the Technical Program Committee. The entire review process was carried out on-line and a significant fraction of the papers were provided in publish ready Adobe Acrobat Portable Document Files (pdf).

We received over 1200 papers from various parts of the globe. In selecting papers, the Technical Program Committee had the excruciatingly difficult task of selecting among many papers of near equivalent quality. It is tempting to draw the conclusion that if a paper was not accepted, it must have been judged a poor or unqualified paper. Although there were such papers submitted, many of the papers that we could not fit into the ISCAS'98 technical program were fine papers.

The Technical Program is comprised of 779 contributed and 140 special session papers. There are three Plenary Talks, two Panel Discussions, 18 Special Sessions and 79 Regular Sessions. With the exception of the plenary session, there will be over 15 parallel sessions each morning or afternoon. About 43% of the papers will be presented in Poster Sessions which have the advantage of allowing attendees to meet the authors personally and to discuss their papers in depth. The Technical Program Committee made no quality differentiation in selecting papers for poster and oral sessions. Papers were assigned with the sole purpose of forming coherent sessions.

We would like to take this opportunity to thank all authors who submitted papers, the reviewers, the Track Chairs, the Members of Technical Program Committee, the Special Sessions Chair, and the special session organizers; they all have contributed mightily to the success of the Technical Program for ISCAS'98.

Kenneth R. Laker and Murali Tummala
Technical Program Co-Chairs
ISCAS ‘98

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Far East Chair
Professor Yong Ching Lim
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Conference Schedule at a Glance

Saturday, May 30, 1998

6:00 PM – 9:00 PM **Tutorial Registration and Reception**

Sunday, May 31, 1998

7:30 AM – 5:00 PM **Conference Registration**

8:00 AM - 12:00 PM **Tutorial Morning Session**

1:00 PM - 5:00 PM **Tutorial Afternoon Session**

6:00 PM - 9:00 PM **Presymposium Reception**

Exhibitors of ISCAS will host a reception at the Monterey Conference Center.

Monday, June 1, 1998

7:30 AM – 5:30 PM **Conference Registration**

8:00 AM **Opening of Conference**

8:05 AM - 8:45 AM **Keynote Speaker**

9:00 AM – 12:30 PM **Morning Technical Sessions**

2:00 PM – 5:30 PM **Afternoon Technical Sessions**

6:00 PM - 9:30 PM **Award and Social Reception**

6:00 PM - 7:15 PM - Social Reception, the Ballroom at the Naval Postgraduate School
7:30 PM - 8:05 PM - Awards Ceremony, Auditorium at the Naval Postgraduate School
8:05 PM - 8:15 PM - "A Farewell to Dr. Richard Hamming"
8:30 PM - 9:30 PM - .Monterey Symphony Concert, Auditorium at the Naval Postgraduate School

Tuesday, June 2, 1998

7:30 AM – 5:30 PM **Conference Registration**

8:05 AM - 8:45 AM **Plenary Speaker**

Dr. Robert Trew - Department of Defense, Office of the Director, Defense Research and Engineering
Title: To Be Announced

9:00 AM – 12:30 PM **Morning Technical Sessions**

2:00 PM – 5:30 PM **AfternoonTechnical Sessions**

4:00 PM - 5:30 PM **Panel Discussion**

Government Research Funding

Circuits and Systems Education

7:00 PM - 11:00 PM - Symposium Banquet at the Monterey Bay Aquarium

Monterey Aquarium, 1 Cannery Row, Monterey

The symposium participants will be hosted by the world renowned Monterey Aquarium to a private party featuring a superb array of music, dining and of course sea creatures.

Wednesday, June 3, 1998

7:30 AM – 5:30 PM **Conference Registration**

8:05 AM - 8:45 AM **Plenary Speaker**

Dr. Hector Ruiz, Executive Vice-President, Motorola, Inc. Office of the President, Semiconductor Product Sector.

9:00 AM – 12:30 PM **Morning Technical Sessions**

2:00 PM – 5:30 PM **AfternoonTechnical Sessions**

End of Conference

Special Invited Talks and Panels

Monday Plenary

Monterey Conference Center, 8:05 AM-8:45 AM

Mr. Jack Harding - President and CEO, Cadence Design Systems, Inc.

Prior to his appointment as President and CEO in October 1997, Jack Harding served as Senior Vice President of Cadence's Strategic Business Group, responsible for overseeing all the company's business units. While these individual units are responsible for product development and marketing, Mr. Harding was charged with guiding the direction and activities of these business units into a cohesive, integrated offering to Cadence's customers. The business units that reported to Mr. Harding were: Alta/High Level design, Custom IC, Deep Submicron, Logic Verification and Performance Engineering.

Recently, he was named to the Council on Competitiveness in Washington, DC, a non-partisan organization of chief executives from industry, labor and academia, working together to set a national agenda to strengthen US competitiveness.

Tuesday Plenary

Monterey Conference Center, 8:05 AM-8:45 AM

Dr. Robert Trew - Department of Defense, Office of the Director, Defense Research and Engineering

Robert J. Trew was appointed Director for Research, Office of the Director, Defense Research and Engineering, effective August 17, 1997. He is responsible for providing scientific leadership, management oversight, policy guidance and coordination of the $1.2 billion annual basic research programs of the Military Services and Defense Agencies. In this capacity, Dr. Trew has cognizance over the complete spectrum of efforts in research including physics, materials, chemistry, biology, electrical engineering and electronics, computer engineering and science, mathematics, environmental sciences and aerospace. In addition, he is

responsible for science, mathematics and engineering education, policy for grants, cooperative agreements and executing the University Research Initiatives and other research efforts administered by the Office of the Secretary of Defense.

He was the Editor of the IEEE *Transactions on Microwave Theory and Techniques* from 1995 to 1997. He has also served as Guest Editor for the *Materials Research Society Bulletin*, and *the International Journal of Microwave and Millimeter-Wave Computer-Aided Engineering*. Dr. Trew is a Fellow of the IEEE. He received the 1992 Alcoa Foundation Distinguished Engineering Research Award.

Panel Discussion Sessions

Monterey Conference Center, 4:00PM - 5:30PM

A. Government Research Funding

A panel discussion will be held on the aspects of future direction of research funding. Various members from all of the major research funding organizations will present their understanding of their organization's direction and then the panel will discuss topics provided by the attendees.

B. Teaching of Circuits and Systems, Electronics and Signal Processing in the 21st Century

A panel discussion will be held on the future of education in circuits and systems. Various members of the academic community, will present and discuss their views.

Wednesday Plenary

Monterey Conference Center, 8:05 AM-8:45 AM

Dr. Hector Ruiz, Executive Vice-President, Motorola, Inc.
Office of the President, Semiconductor Product Sector

Receptions and Social Events

Tutorial Reception

Saturday, May 30, 1998 6:00PM – 9:00PM

Presymposium Reception

Sunday, May 31, 1998 6:00PM –

9:00PM

Award and Social Reception at the Naval Postgraduate School

Monday, June 1, 1998 6:00PM – 9:30PM

A social reception will be held Monday evening at the Barbara McNitt Ballroom in Hermann Hall on the Naval Postgraduate School (NPS) campus. The campus is located one mile east of the Monterey Conference Center.

The reception will be held in the historic Del Monte Hotel (now named after Rear Adm. Ernest Edward Herrmann, first superintendent of NPS) build originally in 1881. The Del Monte was a famous resort owned by the railroad barons of the Southern Pacific and later by Samuel Morse's nephew, until the U.S. Navy purchased the property in 1949 for the Postgraduate School. This ballroom has entertained such dignitaries as Greta Garbo, Johnny Weismuller, Presidents Ulysses S. Grant and Theodore Roosevelt.

Hors d'oeuvres and refreshments will be served until 7:30 PM. The activities will then continue in the King Hall Auditorium on the NPS campus for the Awards ceremony. At 8:30 PM, the Monterey Symphony Orchestra will provide a special concert until 9:30 PM.

Banquet at the Monterey Bay Aquarium

Tuesday, June 2, 1998 7:00 PM – 11:00PM

The Monterey Bay Aquarium will host a special evening of wine, refreshments, music and appetizing food for ISCAS attendees.

The aquarium (www.mbayaq.org) is at the heart of the nation's largest marine sanctuary. More than a hundred galleries and exhibits re-create the bay's many habitats, from shallow tide pools to the vast open ocean. The exhibits include a million-gallon indoor ocean, viewed through the largest window on Earth, a towering three-story kelp forest, and jewel-box exhibits that reveal the delicate beauty of smaller sea creatures. You'll be eye-to-eye with more than 350,000 strange and colorful creatures that live in the Monterey Bay, from playful sea otters and delicate jellies to powerful sharks, elusive octopus and giant ocean sunfish. You can stroke the rough skin of an ochre star or the velvety back of a bat ray. You can also turn a telescope toward a

sea otter in the kelp beds offshore or a microscope on dancing plankton. Videos, special programs and a host of hands-on activities bring the entire family closer to sea life than ever before.

Organized Tours

Three tours are planned for the attendees of ISCAS 98 by Otter Tours & Charters. Room is available for 46 participants on each tour. Please note, if there are insufficient sign-ups for a particular tour, the tour may be canceled. So please enroll early so you don't miss on these valued tours.

Point Lobos/Big Sur Tour – Monday, 1 June
Price: $50.00 per person before 11 May/ $65.00 after May 11
Make sure you bring your camera and film for this one. The tour departs 9:30 AM on Monday June 1, 1998, from the Doubletree Hotel. You will visit Point Lobos, the "Crowned Jewel of California's State Parks", what Francis McComas called the "Finest Meeting of Land and Water in the World". You'll enjoy a gentle nature walk learning the history, flora and fauna. Following Point Lobos, you'll continue down the scenic Pacific Coast Highway viewing some of the most spectacular views in North America. Once in famous Big Sur, you'll visit the world renowned Ventana Inn where you can have lunch while viewing breathtaking scenery. (Note: Lunch expense is not provided in Point Lobos/Big Sur tour cost). After lunch, you'll continue your tour of Big Sur shops and sites and return to the Doubletree by 3:00 PM.

Steinbeck/Wine Tasting Tour – Tuesday, 2 June
Price: $65.00 per person before 11 May/ $80.00 after May 11
This will be a treat for your palate, a wine and food tour of what makes Monterey county world famous agriculturally. The tour departs 9:15 AM on Tuesday June 2, 1998, from the Doubletree Hotel. You will first visit the Chateau Julien Vineyards, where you may taste the fruits of their vines. The Monterey region is renowned for world-class Chardonnays and White Rieslings. Following the Chateau Julien vineyard tour, you'll arrive for a private lunch at the Steinbeck House in Salinas. The childhood home of John Steinbeck is where he immortalized East of Eden in the center of Salinas Valley agriculture. Following the lunch, you'll arrive at Monterey Vineyards in Gonzales for more wine tasting (check out their Riesling). You'll return to the Doubletree by 3:30 PM.

Carmel/Monterey Shopping Tour – Wednesday, 3 June

Price: $45.00 per person before 11 May/ $60.00 after 11 May
Have your shopping shoes in shape! The tour departs at 9:00 AM on Wednesday June 3, 1998, from the Doubletree Hotel. You will tour the historic landmarks of the Peninsula. Your tour guide will show you the Indian burial grounds, adobes, early Monterey landmarks, Colton Hall, Robert Lewis Stevenson House, the Old Custom House, Fisherman's Wharf, Cannery Row, Pacific Grove, Asilomar, Pebble Beach's 17 Mile Drive, Carmel and the Carmel Mission. At noon, the tour bus will allow you to "shop 'til you drop" in the Carmel shopping district. Stop by Clint Eastwood's Hog's Breath Inn and "Make your day!" If you're still standing, the bus will return you at the Doubletree by 3:00 PM.

General Information

Location

Monterey (**www.monterey.com**) is located 100 miles south of San Francisco and 330 miles north of Los Angeles, on the southern edge of Monterey Bay. The locality is rich in history, wildlife and recreation. Since Commodore Sloat took the city without a shot in 1846 during the Mexican War, Monterey was the first capital of California until the Gold Rush of 1849. The quiet seaside resort became the center of the sardine industry in the early 1900's as brought to life by Steinbeck's novel *Cannery Row.* Today, the "Peninsula" has gone from making a living from the sea to being the foremost to protect sea life. The Monterey Bay Marine Preserve is home to countless marine animals, sea lions, otters, whales and dolphins. The Monterey Bay Aquarium, center of Monterey Bay Aquarium Institute (MBARI), provides young and old, hands-on and close up views of our aquatic friends. Early June should provide many photo opportunities of sea lions and otters along the coastline. Because of the natural beauty and rich habitat, thousands come to Monterey to enjoy many activities by the sea, such as scuba diving, sailing, salmon fishing, boating, ocean kayaking. Landlubbers can easily be kept occupied with golfing on 17 world class courses, biking along many of Monterey's bike trails, walking the white sand beaches of Carmel Bay, short jaunts at Point Lobos, Big Sur or Jack's Peak. Another popular sport on the Peninsula is shopping. All types of shop experiences exist, from the outlet stores of Cannery Row to the unique European boutiques of Carmel. Finally, attendees will have multiple choices of some of the best restaurants in the world.

For more ideas see **Local Attractions**.

Getting to Monterey

Airlines

Two airlines and two car rental agencies will provide reduced rates to ISCAS '98 attendees and their families. Discount fares are available for flight destinations by both carriers at:

1.) Monterey Peninsula Airport, 3 miles from conference,
2.) San Jose International Airport, 70 miles from conference,
3.) San Francisco Int. Airport, 100 miles from conference,
4.) Oakland International Airport, 100 miles from conference.
Direct flights to Monterey exist between San Francisco and Los Angeles.

United Airlines

United Airlines is offering a 10% discount off the unrestricted mid-week coach fare or 5% discount off any published airfare from First Class to the lowest applicable discount to all attendees of the IEEE ISCAS '98. United Airlines is also pleased to offer an additional 5% discount towards the purchase of tickets purchased at least 60 days in advance of travel. This special offer applies to travel on domestic segments of all United Airlines, United Express and Shuttle by United flights. United Airline's convenient schedule and discounted fares are available through their Meeting Desk. Call **1-800-521-4041** and reference Meeting ID Code **570IX**. Dedicated reservation personnel are on duty seven days a week from 7:00 AM to 12:00 Midnight EST.

Car rental discounts of 10% with Avis and Alamo car companies are offered through reservations with United. Please use meeting discount **#389817** and rate code **GR** with Alamo. For Avis, please refer to **AWD# K019303**.

American Airlines

American Airlines is providing 5-10% off of applicable fares, and 10%-15% on fares reserved before 60 days. Please identify for your discount with number **AN# 1558UJ** when calling **1-800-433-1790** to make reservations. In conjunction with American, Avis Car Rental will provide discounts with

the reference number **AWD# B136000**.

Train

Amtrak provides train service to Salinas, CA, and bus service to Monterey (12 miles). Trains are available from Northern and Southern California. Please contact Amtrak for more information at **1-800-USA-RAIL (872-7245)** or **www.amtrak.com**. For groups of 20 or more, please call **1-800-872-1477**.

Local Transportation

Local transportation to and from your airport destination and the conference location can be provided by:

Car Rentals in Monterey

Alamo (San Jose)	1-800-327-9633/www.goalamo.com
Avis	1-800-831-2847/www.avis.com
Budget	1-800-527-0700/www.budgetrentacar.com
Enterprise	1-800-73682227/www.pickenterprise.com
Hertz	1-800-654-3131/www.hertz.com
National	1-800-227-7368/www.nationalcar.com

Taxi

Yellow Cab	646-1234
Carmel Yellow Cab	626-3333

Limousine

A-1 Chartered Limousines Inc.	899-2707
Cypress West Sedan & Van Service	626-1234
Tom's Livery Service	626-8119

Airport Shuttle Services

Monterey/Salinas Airbus 1-800-291-2877

The Airbus provides transportation between San Francisco, San Jose and Monterey airports. Advance reservations recommended.

San Jose to Monterey - Fares: 1 person - $ 30.00; 2 people - 54.00; 3 people - 70.00. Shuttles pick up in SJC Terminal A across from the baggage claim to the right, departure side, at the County Transit Bus Stop. In Terminal C, shuttles pick up outside baggage claim to the left at the County Transit Bus Stop. Daily departures from San Jose Airport to Monterey and Salinas are scheduled for 10:30 AM, 1:30 PM, 4:30 PM,

7:00 PM, and 9:30 PM.

San Francisco to Monterey - Fares: 1 person - $ 35.00; 2 people - 58.00; 3 people - 70.00. At the Airport, pick up your shuttle on the lower level (baggage claim area) of any terminal, near the blue column on the center island. One way fare is $35.00, round trip $60.00. Discount for parties of 2 or more. 1-day return and group rates are available. Buses depart SFO daily for Monterey at 9:30 AM, 12:30 PM, 3:30 PM, 6:00 PM, and 8:30 PM. Approximate travel time to Monterey is 3 hours. The bus stops in Monterey at the Monterey Transit Plaza at the intersection of Pearl and Alvarado Streets in downtown Monterey by the Doubletree and Marriott Hotels.

Accommodations

Monterey Conference Center

The Monterey Conference Center offers an exceptional amount of meeting space for the ISCAS. The conference will utilize the Serra Exhibit Hall/Grand Ballroom, the Steinbeck Forum and the DeAnza Ballroom. The conference center is located adjacent the Doubletree and across the street from the Marriott Hotels.

Hotels

The 1998 ISCAS Conference has obtained very reasonable rates for both the Monterey Marriott and the Doubletree Hotel Monterey. Please review the registration form in the center of this advance program to obtain accommodations.

Addresses of the hotels are:

Monterey Marriott
350 Calle Principal
Monterey, CA 93940
Phone: (408) 649-4234
1-800-228-9290
FAX: (408) 372-2968
www.marriott.com/
www.doubletreemonterey.com
marriott/MRYCA

Doubletree Hotel Monterey
2 Portola Plaza
Monterey, CA 93940
Phone: (408) 649-4511
1-800-222-8733 (TREE)
FAX: (408) 649-3109

Internet Access / Email

During the conference there will be locations available for computer and Internet access. These stations are reserved for attendees to contact their email, view conference related websites

or view the ISCAS 98 CD-ROM to print selected publications.

Time Zone

During the end of May and early June, the Monterey Peninsula follows the Standard Pacific Time Zone, or 8 hours following Greenwich meantime. We are 3 hours behind the U.S. East Coast and 18 hours behind Japan and 10 hours behind Western Europe.

Climate

The climate during May and June is very pleasant, with highs in the mid 60's F (16 C) and lows in the upper 40's F (4 C). May and June are in the early part of the dry season for central California. Rain is a rarity, but fog can be expected in the mornings. A jacket is recommended in the evenings, especially close to the bay.

Language

The primary language is English; however for the international visitor, many international languages are spoken in the city. Monterey is home for the Monterey Institute of International Studies and the U.S. Defense Language Institute. For interpreter information contact:

Monterey Institute of International Studies	(408) 647-4130
Monterey Language Academy	(408) 649-8122
Defense Language Institute	(408) 242-5844

Emergencies/ Medical

For all emergencies, call **911** for Fire, Police or Ambulance.

Hospital

General Information 408-624-5311
Community Hospital of the Monterey Peninsula (CHOMP)
23625 W.R. Holman Hwy

For emergencies, the Community Hospital of the Monterey Peninsula is located just off of Route 1 south at the Pebble Beach exit.

Currency

Currency exchange is located can be provided at:
Marriott Front Desk (for guests)
Doubletree Front Desk (for guests)

Local Attractions

The Monterey Peninsula has too many attractions for us to mention in this program. To obtain more than is provided here, please view the website **http:\\www.monterey.com** for a wealth of local information.

Monterey

Visit the downtown historic sites, Colton Hall famous for the signing of the California Constitution, Robert Louis Stevenson's house, the Custom's House, and the Maritime Museum to name a few. Enjoy dining downtown at Fisherman's Wharf, or just about anywhere.

On Tuesday's from 4PM to 7PM downtown Monterey closes Alvarado St. for buyers and spectators to stroll among more than 100 booths. This event features artisans, prepared food vendors, ethnic clothing, musicians, bookmobile, face-painting, old books, and of course, fruits and vegetables, flowers, baker's alley, meat, nuts, honey and eggs. For you bargain hunters, the Monterey Flea Market is open all day Tuesday and Wednesday at the Monterey Fairgrounds, located just south of Fremont towards the Airport.

Carmel-by-the-Sea

On the other side of the hill from Monterey, Carmel, with a population of 5,000 residents, plays host to thousands of visitors each year. By the 1920's, Carmel had already achieved its international reputation as an "artists' colony." Now its biggest attractions are the downtown shopping district and its beautiful beaches. You won't find many sidewalks, streetlights, neon signs or mailing addresses, but you will find specialty shops, boutiques, art and photography galleries and great restaurants. Visit the quaint shops in the Carmel Barnyard or stop in the Hog's Head Inn and "Make my (your) day."

Pacific Grove

Better known by locals as "America's last hometown," Pacific Grove is also known for its thriving population of Monarch butterflies, but by June, they will have left for the summer. A walk through the residential neighborhoods reveals many well-preserved, turn of the century, Victorian homes. History buffs can visit the Point Piños Lighthouse, the oldest operating facility of its kind on the California coast. The Monterey Bay recreational trail passes by Lover's Point, offering many opportunities to view sea otters, sea lions and occasionally passing whales.

Pebble Beach

A gated community located between Carmel-by-the-Sea and Pacific Grove. Its 17-Mile Drive draws hundreds of visitors daily where views of the ocean, cypress trees, fabulous houses and deer, not to mention the world's most dramatic golf courses, are breathtaking. Visit the shops and dining at the Pebble Beach Lodge or the Inn at Spanish Bay

Big Sur

Visit just 25 miles south of Monterey where the mountains meet the ocean. Examine the Redwood forests or dine overlooking the Pacific.

Moss Landing

This seaside port about 20 miles north of Monterey hosts a great find for the antique hunter or a good reason to go salmon fishing on the bay.

Point Lobos State Park

Located 3 miles south of Carmel on Highway 1 provides breathtaking views. Deriving its name from the offshore rocks at Punta de los Lobos Marinos, Point of the Sea Wolves, where the sound of the sea lions carries inland, the reserve has often been called "the crown jewel of the State Park System." For those lovers of the outdoors, you shouldn't miss this jewel. (http://pt-lobos.parks.state.ca.us)

Useful Information

Conference Venue:
Monterey Conference Center
1 Portola Plaza
Monterey, CA 93940
Phone: (408) 646-3770

Hotels:

1. Monterey Marriott		(408) 649-4234
		(800) 228-9290
	FAX:	(408) 372-2968
2. Doubletree Hotel Monterey		(408) 649-4511
		(800) 222-8733 (TREE)
	FAX:	(408) 649-3109

Useful email addresses:

Technical Program	tchair@iscas.nps.navy.mil
Special Sessions	special @iscas.nps.navy.mil
Registration	register@iscas.nps.navy.mil
Secretariat	webmaster@iscas.nps.navy.mil

Conference Secretariat:
Dept. of Electrical & Electronic Engr.
Code EC
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Naval Postgraduate School
Monterey, CA 93943-5121
Phone: (408) 656-5074
FAX: (408) 656-5074
Email: webmaster@iscas.nps.navy.mil
http://www.iscas.nps.navy.mil

Visa and Entry into the United States

A visitor's visa is generally required for citizens of foreign countries who wish to enter the United States and stay on a temporary basis. Applicants for visitor visas must show that they qualify under provisions of the Immigration and Nationality Act. The presumption in the law is that every visa applicant is an intending immigrant, therefore applicants for visitor visas must overcome this presumption by demonstrating that: (1) the purpose of their trip is to enter the US for business or pleasure; (2) that they plan to remain for specific limited periods; and (3) that they have residence outside the US as well as other binding ties which will ensure their return abroad at the end of the visit.

Applicants for visitor visas should generally apply at the American Embassy or Consulate nearest their place of permanent residence. Each such applicant must submit: (1) an application form OF-156, completed and signed (blank forms are available without charge at the US consular office); (2) a passport valid for travel to the US with a validity date at least six months beyond the applicant's intended period of stay in the US, and; (3) one photograph 1.5 x 1.5in (37mm x37mm) for each applicant aged 16 and older, showing full face, without a head covering, against a light background.

You can present a letter from the ISCAS 98 Committee (such as your paper acceptance letter) along with your visa application. Visas are not required for citizens of certain countries, provided that the visitor stays in the US for no more that 90 days at a time and application fees may be required. The following is a list of visa waiver pilot program countries: ***Andorra, Austria, Belgium, Brunei, Denmark, Finland, France, Germany, Iceland, Italy, Ireland, Liechtenstein, Japan, Monaco, Luxembourg, New Zealand, Netherlands, Norway, San Marino, Sweden, Switzerland, Spain, and the United Kingdom***. However, please call the American Embassy or Consulate nearest your place of permanent residence to check whether a visa is required for your country, to obtain appropriate forms, and to inquire about the fees and the processing time generally required. Please plan your trip well in advance. For general information, you can call +1 (202) 633-1225 or contact:

Office of Information
Immigration and Naturalization Service
Department of Justice
425 I St. NW
Washington, DC 20536
Tel: +1(202) 514-4316

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All symposium attendees must register and carry their nametag at all times. Participants are encouraged to preregister to take advantage of the reduced rates for early registration and to avoid possible long registration lines at the conference. You can register either electronically on our web site or by mailing or faxing the completed forms found at the end of this advanced program.
The registration desk at the conference will be open beginning Sunday, May 31, 1998, 7:30am – 5:00pm and on each of the following three days.

ISCAS'98 Proceedings

All conference registrations will include one copy of the complete ISACS'98 proceedings on CD-ROM. Hard copy proceedings will be published in the six volumes listed below. Please check the registration form at the end of the program for the price list of hard copy or additional CD-ROM proceedings.
VOL I – Analog circuits & Systems
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PRESYMPOSIUM TUTORIALS

Presymposium Tutorial registration and reception are scheduled for 6:00PM – 9:00PM on Saturday, May 30, 1998.

Full Day Tutorials - Sunday May 31, 1998 (8 AM – 5 PM)

1. Introduction to Electronic Image Processing

Presenter - Arthur Weeks, University of Central Florida

Many disciplines of science and engineering acquire and analyze images on a routine basis. Typically these images must be processed so that important features can be measured or identified. It is the goal of this short course to introduce the fundamentals of electronic image processing to scientists and engineers that must know how to manipulate images that have been acquired and stored within a digital computer. This course will cover the following topics:

a. Image storage, acquisition, and digitization
b. Image transforms such as Fourier, Hough, Walsh, Hadamar, and Discrete Cosine
c. The difference between the various types of linear and non-linear filters and when to use each
d. The difference between several types of noise in the degradation of an image
e. Image segmentation techniques and how these techniques are used to extract objects from an image

Text: *Fundamentals of Electronic Image Processing*, A. Weeks, SPIE and IEEE Press, 1996.

2. Integrated CMOS Image Sensors: Theory and VLSI Implementation

Co-sponsored by the CAS Analog Signal Processing committee and by the CAS Tech Committee on Multimedia Systems and Applications

Presenters - Cyrus Afghahi, Intel Corporation and Mohammed Ismail, Ohio State University

The advent of submicron CMOS technology and advances in CMOS mixed analog/digital techniques have enabled the development of integrated CMOS image sensors. Innovative applications of such sensors include modern multimedia systems, computer peripherals, portable consumer products, telemedicine etc. The advantages of CMOS image sensors are low voltage, low power (LV/LP) operation, compatibility with standard cheap digital CMOS processes and the possibility of random access and integration of various functions and algorithms on the same chip. This intensive course will introduce the basics in the theory and design of integrated CMOS image sensors. The coverage will be given at an introductory level. Students and newcomers are particularly encouraged to participate.

This course will enable you to understand specification and device physics related to CMOS processing. Also understand system specification for SNR, frame rate, linearity, A/D concepts for integrated CMOS imagers, theory and design of correlated double sampling, basic VLSI LV/LP circuit techniques for imager design and issues in testing integrated CMOS imagers.

3. Introduction to Power Electronic Circuits

Presenter - Issa Batarseh, University of Central Florida

This course will cover the fundamentals of power electronics including applications. Topics will include modern power switching devices, diode and SCR rectifiers, DC-to-DC Switched-mode converters, DC-to-AC Inverters, introduction to soft-switching converters of both Zero-Current-Switching (ZCS) and Zero-Voltage-Switching (ZVS), Power Factor CorrectionCircuits and Total Harmonic Distortion.

Topics will include: Fundamentals of Power Electronics, Applications of Power Electronics, Modern Switching Power Semiconductor Devices, Control Switching Characteristics, Transformers, Single- and Three-phase Systems, Conversion Techniques, Power Factor and THD, DC-TO-DC Switched-mode Converters, Concept of Source Conversion: source <--> load, Linear Regulators, Switch-mode Converters, Isolated and Non-Isolated Switch-mode Converters, Continuous and Discontinuous Conduction Modes of Operations, Soft-switching Resonant Converters, Principle of Operation (Zero-Current Switching/ Zero-Voltage Switching/ Series and Parallel Resonant Converters), Active Power Factor Correction Circuits, Overview of PFCC and Examples of Active PFCC.

Benefits:
Participants will learn about recent advances made power devices, new power electronic circuits used in the design of power supplies such as soft switching topologies. Participants will have an overview of power factor correction and how to design power factor correction circuits.

4. What You Want to Know about Multimedia Circuits and Systems

Presenters - Ming-Ting Sun, University of Washington, Bing Sheu, University of Southern California, Chung-Yu Wu, National Taiwan University, and Tsuhan Chen, Carnegie Mellon University

A. Network Technologies for Multimedia Applications

Video on demand, distance learning, video-conferencing, and digital library, are just some examples of multimedia applications which will have a large impact to our society. However, before we can realize the full potential of these multimedia services, we have to address the challenge of how to deliver multimedia applications over networks cost-effectively, ubiquitously, and with sufficient quality. Several access network technologies such as POTS, ISDN,

ADSL, HFC, FTTC, MMDS, and LMDS have been proposed for delivering multimedia services to the mass market. There are also significant activities in ITU-T, IETF, and ATM Forum to propose standards for multimedia applications over ATM networks and the Internet. In this tutorial talk, we will review the terminologies, features, advantages, limitations, various issues such as Quality of Service, and progresses for these networking technologies. We will provide the audience with an overall picture of multimedia networking technologies and research issues/opportunities in the active area of multimedia networking.

B. Multimedia Circuits and Systems for Practical Applications

Interaction and merging among the computer, communication, and entertainment industries gave birth to the multimedia era. Multimedia has the potential of becoming one of the most powerful forms of searching for information, communicating ideas, and experiencing new concepts of any form of communication or networking. Many business opportunities are connected through the incredible "Information Superhighway - the Internet." As deep-submicron microelectronic technologies continue to advance, the executable system algorithms and software tools become more sophisticated. Moreover the hardware becomes cheaper to construct, and the potential for multimedia systems and machines to be commonly used is tremendous. Therefore, the computer, telecommunication, entertainment, cable, and other consumer electronics industries are racing to this emerging market. Knowledge and results achieved by researchers/engineers in the Circuits and Systems Society of IEEE have been making a significant impact on the development of multimedia products and machines. This talk will describe the trends of development in design technologies and emerging products in multimedia. The underlying algorithms, architectures, and circuit techniques will be presented. Selected simulation and measured results will be used to illustrate how the research and development are accomplished.

C. Advanced CMOS Imaging Technology for Multimedia Video

Advances in submicron VLSI technologies have made possible the integration of sensing devices and readout circuitry on the same microchip for very inexpensive camera-on-chip solutions. Such a break-through CMOS camera chip is indispensable in future multimedia-based personal computers and portable electronic products. With the high integration level, separate frame-grabber hardware is no longer needed because the CMOS implementation allows random access, and holding of the image data on the chip directly. In this talk, we will describe the architecture of the CMOS imager, the sensing device, and various read-out circuit topologies. Practical consideration of the noise reduction techniques associated with the read-out circuits will be emphasized. The intelligent vision techniques to enhance on-chip imaging capability will also be presented. Finally, the applications to multimedia video will be discussed.

D. New Developments in Standards for Video Coding and Multimedia Communications

We will provide an in-depth yet tutorial-valued review of recent progress in video coding and multimedia communications. In the video coding aspect, state-of-the-art coding standards will be presented. Emphasis will be given to a number of emerging standards, including H.263 Version 2 and MPEG-4. In the communication aspect, special considerations for sending multimedia over IP, wireless, and ATM networks, such as error resilience, will be discussed.

5. Coding and Compression of Text, Waveforms and Images

Presenter - Samuel D. Stearns, Sandia National Laboratories and Neeraj Magotra, University of New Mexico

This is a full-day tutorial on text, waveform and image compression. It is designed to teach:

(a) Up-to-date coding and compression procedures,
(b) the application of these procedures to different types of data and signals, and
(c) enough basic theory to enable the student to modify and improve standard procedures in specific applications, and to develop new techniques.

COURSE OUTLINE:

The course will cover the following topics, more or less in the order given, over a course period of 6-8 hours:

Basic coding and compression principles:

(1) Reducing avg. number of bits/symbol; maximizing entropy.
(2) Producing statistically independent symbols; decorrelation.

- Definitions of compression applications to be covered:
- Data types (text, waveforms, images, video) and techniques (lossless compression, lossy compression).
- Summary of coding and compression techniques to be covered:
- Run-length coding, Predictive coding, Transform coding, Huffman coding, and Lempel-Ziv-Welsh coding .
- Codebook techniques: Arithmetic coding
- Lossless coding and compression of data files in general including:
- Run-length coding, Huffman coding, Arithmetic coding, Fixed and adaptive implementations, LZW and arithmetic coding, Lossless predictive coding and Lossless transform coding.

Also Compressibility, Compression of waveform data (music, speech, telemetry, etc.) and digital image and video data will be discussed. Compression software will be provided with this course.

6. Recent Progress in Modeling and Simulation of High-Speed VLSI Interconnects

Presenter - Michel Nakhla, Carleton University

The intense drive for signal integrity has bee n at the forefront of rapid and new development in CAD algorithms. With increasing

demands for high signal speeds coupled with a decrease in feature size, interconnect effects such as signal delay, distortion and crosstalk become the dominant factors limiting overall performance of VLSI systems. On the other hand, interconnect structures can be diverse and present at any of the hierarchical packaging levels including integrated circuits, printed circuit boards, multi-chip modules and backplanes. If not considered during the design stage, interconnect effects can cause logic glitches, which render a fabricated digital circuit inoperable, or they may be able to distort an analog signal such that it fails to meet specifications. Since extra iterations in the design cycle are costly, accurate prediction of these effects is a necessity in high-speed designs. Although conventional CAD tools such as SPICE are used routinely by many engineers for analog simulation and general circuit analysis, these tools do not handle adequately the new emerging challenges of interconnect effects. This lead to intense research during recent years to develop efficient techniques for accurate signal integrity analysis associated with high-speed interconnects.

Recently proposed model-reduction techniques such as Asymptotic Waveform Evaluation (AWE), Complex -Frequency Hopping (CFH) and Krylov space-based methods have proven useful in the analysis of large interconnect structures containing lossless and lossy high-speed interconnects with linear or nonlinear terminations. At a CPU cost of a little more than one DC analysis, these techniques are 2-3 orders of magnitude faster than conventional methods.

This tutorial presents an overview of interconnect modeling/simulation strategies with emphasis on diverse algorithms and applications of model- reduction techniques. The underlying basic concepts will be demonstrated by several practical examples.

The tutorial is intended for developers of CAD tools and for circuit designers as well. It is presented in an easy to understand style and prior background in this area is not required. The first part of the course covers the basic principles of circuit simulation. The second part focuses on issues and analysis techniques related to high-speed circuits and interconnects. Various interconnect models will be considered including RC/RLC lumped, distributed, full-wave, measured and EMI-based. The basic principles of model-reduction techniques will be described in details together with their extension to some frequently-encountered practical situations such as simulation of subcircuits characterized by measured S-parameters and frequency-dependent components (e.g. resulting from skin and proximity effects). Applications cover wide spectrum of implementation hierarchy including chip, multichip modules, packages and printed circuit boards.

7. MPEG Standards and Video Compression

Presenter - Wasfy B. Mikhael, University of Central Florida, Yousef Nijim, Thompson Consumer Electronics, and Arun Ramaswamy, Vela Research, Inc.

In recent years, development of products and services offering Multimedia, Video Teleconferencing and full-motion digital video is undergoing remarkable progress, and it is almost certain that digital video will have significant impact on the computer, telecommunications and imaging industries in the next decade. Signal compression and coding techniques are the most crucial step in developing future multimedia applications.

This short course would cover the MPEG-1, MPEG-2, DVB and the ATSC standards. Emphasis would be given to both the compression and system layers.

Standards:

MPEG 1&2 video: Analysis, Fundamentals, motion estimation, and prediction.
MPEG 1&2 Systems: Systems, program, and transport streams, concepts, synchronization, buffer management, timing, and trick modes.
DVB and ATSC specifications.

In this short course you will learn:

Video compression fundamentals and concepts.
Current trends and future directions of implementation.
Multiplexing and demultiplexing of audio and video for MPEG1, and MPEG2.
Understanding video encoders and decoders.

Personnel responsible for strategic planning, business development, technical sales and marketing, Engineering, R&D, and others who are interested in understanding and evaluating MPEG1, MPEG2, and video compression standards and technology should attend.

8. Global ATM Networks (GANs): Technical Issues for Multimedia Applications

Presenter - Andres Albanese, International Computer Science Institute

Internet has evolved into a global network driven by multiple applications that enable users to access global information and to reach level of productivity much higher than those achieved over local and metropolitan area networks. A key factor for the evolution of a network is its simplification to achieve connectivity on a global scale and to support the many applications, service providers, and equipment manufacturers. This global connectivity is being address by the deployment of an ATM (Asynchronous Transfer Mode) service widely supported by the telecommunication and computer industry to provide connectivity from local to global dimensions.

Recently, there has been a large interest in developing commercial applications requiring a service with warranties in quality of services (QOS) beyond the capabilities of the "best effort service" offered by the Internet of today. Such warranties in QOS have been difficult to achieve in a global are a network scenario because of the many barriers caused by the heterogeneity of hosts and diverse

pricing policy of communication services, and various other various issues that show up in different places and at different times. Solutions based in real-time protocols and resource allocation policies have not scale up due to the large numbers of administration domains.

In spite of the lacking of a total solution, Global ATM Networks are being deployed to support group interactions at large, but there are several issues that have to be addressed for their success in achieving high utilization and low cost. Information must be compressed, and encoded to be resilient to unforeseen events and to allow for information recovery under packet loss conditions. The course explores solutions for sharing multimedia applications over a Global Area Network to determine the impact of computer supported collaborative work in the commercial environment.
Here is a list of technical issues to be addressed:

-- No global management.
Several service providers are interworked to provide end-to-end service. The user applications have to share control and management information to monitor the network performance and schedule allocation of network resources.

-- Varying QOS.
End-to-end communication experiences a varying quality of service (QOS) due to the service interworking of several service providers. Bandwidth compression and priority encoding are required to cope with high transmission cost, network congestion, and unpredictable loss.

-- Long round trip delays.
Echo cancellation is required for voice applications involving many users and workstations of heterogeneous performance.

-- Different Time Zones.
Synchronous and asynchronous communications are required among users in different time zones.

-- Security in group communication.
Tools are required to establish trust among service providers, information sources, and users.

The course describes experiments being carried out on MAY (Multimedia Application on Intercontinental Highway), an all ATM Intercontinental network extending from Germany to California implemented to explore multimedia services. It also describes multimedia application experiments, in the San Francisco Bay Area where there is the NTON, National Transparent Optical Network, that is a 10 Gigabit/second multi wavelength back bond interworked with the NASA ACTS (Advanced Communication Technology Satellite).

ICSI is exploring "smart applications" to run over simple networks, without a global management, and without end-to-end QOS guarantees. This "smart applications" will do in the end-station many of the functions done today in the network like resource management, security, and control and all of this in addition of the

usual machine-user interface functions done in the past. Having "Smart applications" dealing with "bursty" congested networks, will allow better network utilization with translate in lower user cost.

Applications running on different user workstations collaborate in sharing service observations to develop user utilization strategies to optimize cost, performance, or quality of service. Optimizations algorithms distributed in workstations will be part a necessary part of applications to find minimum cost, best time for conferencing, and to discover affordable network resources.

9. Multimedia Audiovisual Communication Services

Presenter - K. R. Rao, University of Texas at Arlington

Low bit rate audiovisual communication services aimed at mobile (cellular) channels, multimedia videoconferencing on a PC via ordinary telephone lines, and videophones. Video over the Internet, video e-mail. Object/content based coding. Synthetic & natural (hybrid) video/audio coding. Animation, graphics, video composition etc.

A. IS G.723.1 Dual rate speech coder for multimedia telecommunication transmitting at 5.3 and 6.3 Kbits/s. Also annexes.

B. MPEG-4 Video/Audio

Coding ISO/IEC JTC1/SC29/WG11, Requirements, Test/Evaluation, Call for proposals, Verification Models, (VM) system description language (MSDL) (IS: Nov. 1998). VM 9.0 (Oct. 1997), Synthetic and natural images hybrid coding (SNHC). Audio coding. (Oct. 1997). Audio WD V 5.0. Systems, Content/object based coding, functionalities and applications.

C. Very low bit rate audiovisual communication services, H.263 IS by ITU-T study Group 15. H. 263 is part of H.324 which includes multiplexing protocols, multimedia system control, terminals, dialing etc., IS: International Standard H. 263 + Near term standardization of enhancements of the H. 263 video coding algorithm for real-time telecommunication. IS: April 1997. H. 263 L (Long term) LBR video coding recommendation achieving better video quality, lower complexity and better error resilience. ITU-T low bit-rate experts groups advanced video coding project aimed at real-time audio/visual conversational services/ applications. IS to coincide with MPEG-4. Draft Rec. H.223/Annex A: Multiplexing protocol for low bit-rate multimedia communication.

D. MPEG-2 Multiview profile (stereoscopic video coding), 4:2:2 profile and adaptive audio coder (nonbackward compatible audio) (AAC)

E. JPEG Extensions, JPEG-2000

F. MPEG-7: Multimedia content driven interface. This course is directed at researchers, engineers, technical managers and academia that like to keep abreast with the emerging/established standards aimed at interactive video/audio communications/storage services at very low bit rates so that software/hardware at various levels can be designed/developed. They can also integrate the boards/codecs with their existing PCs/workstations resulting in multimedia,

teleconferencing, videophone and other interactive services.

Half Day Tutorials - Sunday May 31, 1998

10. A Satellite Communications Tutorial (8-12AM)

Presenter - Linwood Jones, University of Central Florida

Because of the wide-scale application of satellite telecommunications, this course is highly beneficial to electrical engineers that have an interest in communications, signal processing and electromagnetics. This course teaches the principles of satellite communications from a system overview perspective. Topics include: satellite orbits, communication satellite subsystems (with emphasis on communications transponders), earth stations, communications link analyses, frequency division and time division multiple access.

11. Contemporary Communications Satellite Systems (1-5PM)

Presenter - Linwood Jones, University of Central Florida

This course describes contemporary communications satellite systems. Three satcom systems, namely: INTELSAT (international telecommunications), Advanced Communications Technology Satellite (ACTS) and IRIDUM (spaced-based cellular telephone) presented in a systems overview. Examples of earth and satellite subsystems are presented.

12. VLSI Architectures for Video and Data Communications (8-12AM)

Presenter - Keshab Parhi

This tutorial addresses approaches to implementation of next generation signal and video processors necessary for multimedia communication systems. High level transformations will be reviewed. Low power design aspects will be particularly emphasized. Computer arithmetic implementation styles will be considered. Both video and data communication systems will be addressed. Implementation approaches for both dedicated and programmable styles will be considered. Examples such as cable modems and video styles will be considered. Examples such as cable modems and video compression will be addressed. Topics include:

A. Architectural Transformations - high level transformations such as pipelining, retiming, parallel processing, algorithmic and numerical strength reduction, folding and unfolding and their impact on area-speed-power tradeoffs. Power reduction by reduction of supply voltage, capacitance and switching activities.

B. Arithmetic architectures - high speed and low-power multiplication and addition in two's complement, and redundant number systems, carry-save and canonic signed digit numbers. Implementation styles such as bit- and digit-serial methodologies.

C Video Compression Systems - architectures for DCT, motion estimation and VLDs, implementation using dedicated and

media and MMX programmable DSPs.

D. Data Communication Systems - Architectures for Viterbi decoders, finite field and error control coders, cable modems. Trends in programmable DSPs for wireless systems.

13. XDSL Digital Subscriber Lines (1-5PM)

Presenter - Walter Chen

Discussion about Digital Subscriber Lines. Fundamentals of the DSL engineering process as well as specifics of DSL systems are discussed.

Text: *Digital Subscriber Lines*, W. Chen, McMillan, 1997.

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Technical Program Committee

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He, Lei
He, Y.
Hegde, Raj
Helfenstein, Markus
Hella, Mona
Hematy, Arman
Herrmann, K.
Hiser, Doug
Hosur, Srinath
Huang, Chung-Lin
Huang, Y. F.
Huang, Yih-Fang
Ingino Jr., Joseph
Ioinovici, Adrian
Ismail, Mohammed
Iyer, Arathi
Jen, Chein-Wei
Jenkins, W. Kenneth
Jia-lin, Shen,
Jiang, Danchi
Johns, David
Johnson, Bruce
Jonsson, Bengt E.
Jove, Xavier
Karsilayan, Aydin
Kazimierczuk, Marian K.
Kennedy, Michael P
Khali, Hakim
Khoo, KeiYong
Khoury, J.
Kim, Jonghae
Klein, Hans
Knight, John
Koneru, Satyaki
Kot, Alex
Kouwenhoven, Michiel
Kozhaya, Joseph
Kraljic, Ivan
Kropp, H.
Kuhn, William B.
Kuo, C.-C. Jay
Laker, Ken
Lan, Mao-Feng
Laurin, Jean-Jacques
Lazzaro, John
Le, Vuong Kim
Lee, David C.
Lee, Edward

Lee, Michael
Leme, Carlos Azeredo
Leong, Choon H. C.
Leung, Vincent
Li, Chung-Sheng
Li, Harry
Li, Weiping
Lidgey, John
Lim, Drahoslav
Lim, Y. C.
Liou, M. L.
Loai, Louis
Loloee, Arash
Lopez, David Baez
Loui, Alex
Low, Seo-How
Lu , Yilong
Lu, W.-S.
Luong, Howard
Lustenberger, Felix
Mactaggart, I. Ross
Magdy, Mayoumi
Mahattanakul, Jirayuth
Mahmoud, Hanan
Malik, Saqib Q.
Manetakis, K.
Manku, Tajinder
Marston, Neil
Mayaram, Karti
McCartney, Damien
Mech, R.
Meier, Thomas
Mendonca, Gelson V.
Mirzai, Bahram
Mok, Philip K. T.
Mokhtari, Mehran
Monteiro, Fabrice
Moon, Gyu
Moore, P. A.
Moreno, Moran
Moschytz, G. S.
Mow, Wai Ho
Mueller, Paul
Mulder, Jan
Murata, Tad
Naiknaware, Ravi
Nair, Kavita S.
Nakhla, Michel
Narayana, Amit
Nekili, Mohamed
Ng, A. E. J.
Ng, Wai Tung
Nguyen, Truong
Nielsen, Asbeck
Noren, K.
Nowrouzian, B.
Ohmacht, M.
Ong, Adrian
Opal, Ajoy
Papathanasiou, K.
Parhi, Keshab K.
París, Jordi
Patel, R.
Payne, Alison
Perkins, Stephen J.
Piazza, F.
Plett, Calvin
Plotkin, E.
Raje, Salil
Ramprasad, Sumant
Reuter, C.
Ribas, J.
Roberts, Gordon
Rosenbaum, Elyse
Rost, U.
Roytman, L. M.
Rumin, Nicholas
Sánchez-Sinencio, Edgar
Sansen, W.
Sarkar, Nilanjan
Sarmiento-Reyes, A.
Sarraj, Maher
Savaria, Yvon
Sawan, Mohamad
Schaumann, Rolf
Schlarmann, Mark
Schmid, Hanspeter
Schuelke, Robert
Schuppener, Gerd
Sculley, Terry
Seevinck, E.
Serdijn, Wouter A.
Sewell, J.I.
Shanbhag, Naresh
Shen, G.B.
Shenai, Krishna
Shilman, Michael
Shiu, Da-shan
Shpak, Dale
Silva Martinez, Jose
Smy, Tom
Snelgrove, Martin
Soma, Mani
Song, B.
Spalding, George R
Sriram, S.
Stouraitis, Thanos
Suder, Ed
Sun, Ming-Ting
Suyama, K.
Swamy, M. S. S.
Tam, Derek
Tarr, Garry
Thanachayanont, Apinunt
Thanos, Stouraitis
Thorp, James S.
Thulasiraman, K.
Tong, Wen
Toumazou, C.
Tretz, C.
Tsai, Ching-Han
Tschanz, Jim
Tse, Michael C. K.
Tzou, Kou-Hu
Ubiergo, Gabriel F.
Vaidyanathan, P. P.
van der Woerd, A.
van Staveren, Arie
Veillette, Benoit R.
Vital, Joao
Vlach, Jiri
Wad, Paul E.
Walkey, David J.
Wang, J.
Wang, Janet Meiling
Wang, Jhing-fa
Wang, Maogang
Wang, X.-F.
Wang, Yao
Weisbin, Amy
Whiteside, Frank
Wing, Omar
Wittenburg, J.-P.
Wollborn, M.
Worapishet, Apisak
Wu, K.
Wu, Lin
Yamamoto, Yoshio
Yan, Jie
Yang, R.
Yazdanpanah, M.
Yeap, Gary
Yoh, Gilbert
Younis, Ahmed
Yu, Baiying
Yu, Chong-Gun
Yu, Qingjian
Yun, Xiaoping
Zaghloul, Mona
Zefran, Milos
Zeng, B.
Zeng, Fan-Gang
Zhang, Chengjin
Zhang, Q. J.
Zhou, Joe P
Zhu, Weiping
Zohios, Jerasimos
Zukowski, C.

	Sun	Monday, June 1		Tuesday, June 2				Wednesday, June 3		
		MA	MP	TA/TB	TP			WA/WB		WP
1	Short Courses	Parameter Estimation	Multidemsional Sig. Processing	Filter Banks & Wavelets	Adpt SP II	Panel Session- Govt. Fund. Rsch.	Panel Session – Ckt. & Sys. Educ.	Adaptive Sig. Processing III		Wavelets: Impl & Applications
2		Single-rate & Multirate Filters	**Opt. of Subband Cdrs bsd Input**	**Model Anal & Des. Swit. Cnvt.**	**Code Obj**			**Steerable Filters & Applications**		**3D Data Mod & Imaging**
3		**NN for Intel-ligent Sig. Proc.**	**Memory, Adapt. & Learning**	NNI: Algor. & Computation	NNII: Imp Iss			Nets Bio Comput & Fuzzy Logic		Cellular NN
4		Image Processing & Coding	Multimedia Sys.& Processing	Speech &Video Processing	Imag & Vid Prc			Image & Video Processing III		Hi-Lev Syn / Gate Arrays
5		Sig. Proc. For Communcations I	Equal./Modul./ Decoding	**Communicating with Chaos I**	SP for Com II			Wireless/Mobile Communications		**Arch, Alg & Imp Wireless Comm**
6		Low-Power IC Techniques	Circuit Tech. For Wireless Appl.	Programmable Logic Devices	Comm Net I			Dig Cir Issues	DSP Arch	Topics Analog & Digital Test
7		Chaos & Application	Cir. Tech for Wireless Appl.	Nonlinear Ntwk & Systems	Anal VLSI			Power Elect	**Impr ADCs**	**Ctrl Bifurcation & Chaos**

8	**Short Courses**	Data Converters	Continuous- Time Filters	Amplifiers I			**Panel Session- Govt. Fund. Rsch.**	**Panel Session – Ckt. & Sys. Educ.**	Amplifiers III	Current Mode Techniques	
9		Sym. Anal Meth &Appl to Anal	Hi-Speed Comm. Circuits	Logdomain Filters		**Comm Chaos**			Sw-Capacitors Techniques	Amplifier Building Blocks	
10		Low Power Digital Ckt. Dsgn	Interconnect Modeling & Des	Oversampled Data Converters		Circuit Simul			**Communicating with Chaos III**	Oversampled & SD Tech II	
11		VLSI Circuits for MM Sig. Proc.	**Multi-Sensor Data Fusion**	**DSP for Hearing Aids**		Robo-tics			VLSI Layout & Timing	Device Modeling	
12		VLSI Digital Circuits	Power Distribution Sys.	Analog Circuits Design		Fdbk Sys			**Sys & Appl Next Gen Internet**	Filters & Electronics Ckt	
13		**Communcations Circuits**	**Image & Video Proc. I**	**Adpt SP I**	**DSP Implt**	**MM Proc**			**Digital Filter Des & Impl**	**MM/ Comm**	**C&S Comm**
14		**Circuits & Power Systems**	**VLSI I**	**VLSI II**	**Ckt & PS II**	**Osmpl &SD**			**VLSI Arch, Alg & CAD**	**Neural Networks**	
15		**Analog Filters**	**Analog & Mixed Sig. VLSI Des**	**CAD I**		**Sensor & Ckt**			**CAD III**	**Analog Ckt & Sys**	

Special **Poster**

Call for Participation

1st IEEE-CAS Workshop on Wireless-Communication Circuits and Systems

June 22-24, 1998, Hotel Palace, Lucerne, Switzerland

In an effort to apply the vast expertise of the CAS-Society in the area of circuit and system design to the rapidly growing field of wireless communications, a workshop devoted to this theme will be held at the Hotel Palace in Lucerne, Switzerland, from June 22 to 24, 1998. The workshop will combine presentations by invited experts in the field from academia and industry, with panel and informal discussions. Please see
http://www.isi.ee.ethz.ch/workshop98/

Organizing Committee

George S. Moschytz (Chairman)
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Gertjan Kaat
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Christofer Toumazou
Markus Helfenstein (Coordinator)

For details and registration, please contact:

Dr. Markus Helfenstein
Signal and Information Processing Laboratory
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8092 Zurich, Switzerland
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Tel: (+41) 1 632 3619
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MONDAY – JUNE 1, 1998 MORNING

MAA1 Parameter Estimation - Lecture

Professor Eugene I. Plotkin, *Concordia University, Canada*

MAA1-1 **On the Harmonic Analysis of Speech**
Stylianou, Ioannis G., *AT&T Labs Research*

MAA1-2 **Parameter-free structure modeling: A Contribution to the solution of highly correlated AR-signals**
Plotkin, Eugene I. and Swamy, M.N.S.,*Concordia University*

MAA1-3 **A new approach for coherent direction-of-arrival estimation**
Ching, Pak Chung, and Lai, Wai Kuen, *The Chinese University of Hong Kong*

MAA1-4 **Non-minimum phase FIR System Identification using Cumulants with Selected Orders**
Li, S., *Sarnoff Corporation,* Siu, Wan-Chi, *Hong Kong Polythechnic Univ.*

MAA1-5 **A subspace method for blind single channel identification using redundancy transform in transmitters**
Choi, Jinho, *Curtin University of Technology*

MAA1-6 **On Implementation of a Least-Squares Based Algorithm for Noisy Autoregressive Signals**
Zheng, Wei Xing, *University of Western Sydney, Nepean*

MAA1-7 **Parallel Computation of SVD for High Resolution DOA Estimation**
Liu, Zemin and Feng, Gang, *Beijing Uni. of Posts & Telecommunications*

MAA1-8 **Performance Analysis of a class of Cyclic Weighted Subspace Fitting Method of Direction Estimation for Cyclostationary Signals**
Bao, Zheng and Yu, Hongyi, *Xidian University*

MAA2 Single-Rate and Multirate Filters - Lecture

Dr. Charles Creusere, *Naval Air Warfare Center, China Lake, CA*

MAA2-1 **The Design of Optimum Filters for Quantizing a class of Non Bandlimited Signals**
Vaidyanathan, P. P., and Tuqan, Jamal, *California Institute of Technology*

MAA2-2 **M-th Band Filter Design Based on Cosine Modulation**
Oraintara, Soontorn and Nguyen, Truong Q, *Boston University*

MAA2-3 **An Iterative Quadratic Programming Method for Multirate Filter Design**
Mo, Yanshu; Lu, W.-S., and Antoniou, Andreas, *University of Victoria*

MAA2-4 **Filter Structures Composed of Allpass and FIR Filters for Interpolation and Decimation with Factors of Two**
Johansson, Håkan and Wanhammar, Lars, *Linköping University*

MAA2-5 **Realization of General 2-D Linear-Phrase FIR Filters Using the Singular-Value Decomposition**
Zhu, Wei-Ping and Ahmad, I., *Hong Kong University of Science and Technology;* Swamy, M.N. S, *Concordia University*

MAA2-6 **New insights into multirate systems with stochastic**

inputs using Bifrequency Analysis
Akkarakaran, Sony, and Vaidyanathan, P. P, *California Institute of Technology*

MAA2-7 **Synthesis of 2-D Half-Band Filters using the Frequency Response Masking Technique**
Lim,, Yong-Ching, and Low, Seo-How, *National University of Singapore*

MAA2-8 **Continuous-time signal processing based on polynomial approximation**
Vesma, Jussi; Saramaki, Tapio; Renfors, Markku; and Ridha, Hamila, *Tampere University of Technology*

MAA3 Neural Networks for Intelligent Signal Processing – Special Session

Professor Chung-Yu Wu, *National Chiao Tung University*

MAA3-1 **Dynamical Functional Artificial Neural Networks (D-FANNs) for Intelligent Signal Processing**
de Figueiredo, Rui J, *U.C. Irvine*

MAA3-2 **Real-Time On-Line Blind Signal Recovery from Dynamic and Nonlinear Mixing Environments**
Salam, F., *Michigan State University;* Ertan, Gamze, *IC Tech, Inc.*

MAA3-3 **Compact Neural Network Detector for Har-Disk Drive Using Zero-Forcing Preprocessing**
Wang, Michelle and Sheu, Bing J, *University of Southern California*

MAA3-4 **VLSI Chaotic Pulse Coded Modulator Using Neural Type Cells**
Newcomb, Robert, *University of Maryland;* Zaghloul, Mona, *The George Washington University;* Sellami, Louiza, *University of Maryland*

MAA3-5 **A Multi-Resolution Image Registration Method for Multimedia Applications**
Huang, Chung-Lin and Chang, Pen-Yiing, *National Tsing-Hua University*

MAA3-6 **Blind Separation of convolutes Sources through Stochastic Model-Free Optimization**
Cauwenberghs, Gert and Cohen, Marc, *Johns Hopkins University*

MAA3-7 **Recognition of Handwritten Chinese Postal Address Using Neural Networks**
Su, Yih-Ming, and Wang, Jhing-Fa, *National Cheng Kung University*

MAA3-8 **Intelligent Data Acquisition and Processing for Managing Higher-Education Priorities in Modern Era**
Sheu, Bing J, *University of Southern California;* Lee, Wai, *Texas Instruments, Inc.;* Young, Albert, *The Aerospace Corporation*

MAA4 Image Processing and Coding - Lecture

Professor Ming-Ting Sun, *University of Washington.*
Prof. Thomas Sikora, *HHI, Germany*

MAA4-1 **A Lapped Transform Progressive Image Coder**
Tran, Trac, and Nguyen, Truong Q, *Boston University*

MAA4-2 **Joint Channel and Source Decoding for Vector Quantized Image Using Turbo Codes**
Costello, Daniel J., Stevenson, Robert L., Huang, Yih-Fang, and Peng, Zhishi, *University of Notre Dame*

MAA4-3 **An Enhanced Trellis Coded Quantization Scheme for**

Robust Image Transmission
Li, Hongzhi and Chen, Chang, *University of Missouri-Columbia*

MAA4-4 **Dimensional Adaptive Arithmetic Coding for Image Compression**
Ling, Fan, and Li, Weiping, *Lehigh University*

MAA4-5 **An efficient weight optimization algorithm for image representation using nonorthogonal basis vectors**
Chan, Yuk-Hee, and Siu, Wan Chi, *Hong Kong Polytechnic* ***Univ.***

MAA4-6 **Morphological Signal Adaptive Median Filter For Still Image and Image Sequence Filtering**
Tsekeridou, Sofia; Kotropoulos, Constantine; Pitas, Ioannis, *Aristotle Univ. of Thessaloniki*

MAA4-7 **Vector Set-Partitioning with Classified Successive Refinement VQ for Embedded Image Coding**
Mukherjee, Debargha and Mitra, Sanjit K, *University of California, Santa Barbara*

MAA4-8 **Wavelet-based Perceptual Image Compression**
Lai, Yung-Kai and Kuo, C.-C. J, *University of Southern California*

MAA5 Signal Processing for Communications-I – Lecture

Dr. Alex Kot, *Nanyang Technological University*

MAA5-1 **FFT-Based Clipper Receiver for Fast Frequency-Hopping Spread Spectrum System**
Kot, Alex C, *Nanyang Technological University;* Li, S., *Sarnoff Corporation;* Teh, Kah Chan, *Nanyang Technological University*

MAA5-2 **Harmonic and Intermodulation due to Requantization of Fixed-Point Numbers**
Fettweis, Gerhard and Hentschel, Tim, *Dresden Univ. of Tech.*

MAA5-3 **A comparison of CAP/QAM Architectures**
Abdolhamid, Amir and Johns, David A., *University of Toronto*

MAA5-4 **Quantization for Robust Sequential M-ary Signal Detection**
Ranganathan, Nagarajan and Chandramouli, Rajarathnam, *University of South Florida*

MAA5-5 **The Optimal RLS Parameter Tracking Algorithm for a Power Amplifier Feed-Forward Linearizer**
Chen, Pei-Yin, *National Cheng Kung Univ.* and Tsai, R.H., *University of Southern California;* Chen, Juinn-Tsair, *Stanford University*

MAA5-6 **Selectivity and sensitivity performances of superregenerstive receivers**
Dehollian, C.; Vouilloz, Alexandre; and Declercq, M., *Ecole Polytechnique Federale de Lausanne*

MAA5-7 **A New Model for the DOA Estimation of the Coherent Signals**
Jin, Liang; Yao, Minli; and Yin, Qinye, *College of Electronics and Information Engineering*

MAA5-8 **A System Scheme for Downlink Selective Beamforming in Smart Antenna**
Li, S., *Sarnoff Corporation*, Yin, Qinye and Jin, Liang, *College of Electronics and Information Engineering*

MAA6 Low-Power IC Techniques - Lecture

Professor Eby G. Friedman, *University of Rochester*

MAA6-1 **Signal Coding for Low Power: Fundamental Limits and Practical Realizations**
Ramprasad, Sumant and Shanbhag, Naresh, *University of Illinois at Urbana-Champaign*

MAA6-2 **Finite-State Machine Partitioning for Low-Power**

Consumption
Micheli, Giovanni D., *Stanford University*, Vermeulen, Frederik, *IMEC*, and Benini, Luca, *Stanford University*

MAA6-3 **Use of Charge Sharing to Reduce Energy Consumption in Wide Fan-in Gates**
Elmasry, Mohamed I. and Khellah, Muhammad, *University of Waterloo*

MAA6-4 **Low Power/Low Swing Domino CMOS Logic**
Rjoub, Abdoul and Koufopavlou, Odysseas, *VLSI Design Laboratory* and Nikolaidis, Spyridon, *Aristotle University of Thessaloniki*

MAA6-5 **Power Optimization of Combinational Modules Using Self-Timed Precomputation**
Mota, Antonio, and Monteiro, Jose C., *INESC-IST*, and Oliveira, Arlindo L., *Cadence European Labs/INESC-IST*

MAA6-6 **Low Power, High Performance FFT Design**
Stevens, Kenneth S., and Suter, Bruce, *Air Force Institute of Technology*

MAA6-7 **A configurable 32nd order low voltage low power digital filter for portable applications**
Salama, C.Andre and Suvakovik, Dusan, *University of Toronto*

MAA6-8 **Optimal Design of Low Power Nested Gm-C Compensation Amplifiers Using a Current-Based MOS Transistor Model**
Sanchez-Sinencio, Edgar, *Texas A&M University*

MAA7 Chaos and Applications - Lecture

Professor Martin Hasler, *Swiss Federal Institute of Technology Lausanne*

MAA7-1 **Synchronous phenomena from chaotic circuits with intermittently coupled capacitors**
Torikai, Hiroyuki; Matsushita, Takanori; and Saito, Toshimichi, *Hosei University*

MAA7-2 **BER Performance of Chaos Communication Systems Including Modulation - Demodulation Circuits**
Nishio, Yoshifumi; Ushida, Akio; and Wada, Masahiro, *Tokushima University*

MAA7-3 **Chaos shift keying in the presence of noise: a simple discrete time example**
Hasler, Martin, *Swiss Federal Institute of Technology Lausanne*

MAA7-4 **Chaotic Signals for CW-Ranging Systems - a Baseband System Model for Distance and Bearing Estimation**
Bauer, Andreas, *Technical University Dresden*

MAA7-5 **Design of Infinite Chaotic Polyphase Sequences with Perfect Correlation Properties**
Schwarz, Wolfgang and Goetz, Marco, *Technical University Dresden*

MAA7-6 **Design of nonlinear observers for hyperchaos synchronization using a scalar signal**
Mascolo, Saverio, *Politecnico di Bari;* Grassi, Giuseppe, *Universita' di Lecce*

MAA7-7 **Synchronization in arrays of chaotic circuits coupled via hypergraphs: static and dynamic coupling**
Wu, Chai Wah, *IBM Thomas J. Watson Research Center*

MAA7-8 **Chaotic and bifurcation behavior in an autonomous flip-flop circuit used by piecewise linear tunnel diodes**
Okazaki, Hideaki, *Gifu National College of Technology*

MAA8 Data Converters -Lecture

MONDAY – June 1, 1998 (Morning)

Professor William Black, *Iowa State University*

MAA8-1 **Fast pipelined A/D converter inCMOS technology**
Greeneich, E. and Park, Sangbeom, *Arizona State University*

MAA8-2 **A 1V CMOS floating point ADC for portable communication devices**
Salama, C., Andre T., and Hayashi, Takayuki, *University of Toronto*

MAA8-3 **A 200 MHz 6-bit folding and interpolating ADC in 0.5-um CMOS**
Willson, Alan N., *UCLA* and Wang, Michelle, *University of Southern California;* Jiang, Hsin-Chin, *Institute of Electronics, National Chiao-Tung Univ.*

MAA8-4 **A CMOS Current 0-Mode Pipeline ADC using Zero-Voltage Sampling Technique**
Hui, Ronny and Luong, Howard C., *The Hong Kong University of Science and Technology*

MAA8-5 **A comparison of monolithic background calibration in two time-interleaved analog-to-digital converters**
Hurst, Paul J.; Lewis, Stephen H.; Fu, Daihong; and Dyer Kenneth C., *University of California-Davis*

MAA8-6 **Improving Linearity in High-Speed Analog-to-Digital Converters**
Gazzoli, Giuseppe and Gatti, Umberto, *Italtel S.p.A.* and Maloberti, Franco, *University of Pavia*

MAA8-7 **On the Dynamic Performance of High-Speed ADC Architectures**
Tan, Nianxiong, *Ericsson Components* and Gustavsson, Mikael, *Linköping University*

MAA8-8 **Modeling of CMOS Digital-to-Analog Converters for Telecommunication**
Wikner, J Jacob, *Linkoeping University* and Tan, Nianxiong, *Ericsson Components*

MAA9 Sym. Anal. Meths. & Appl. to Anal. Cir. Design. – Special Session

Professor Marwan Hassoun, *Iowa State University*

MAA9-1 **Applications of Symbolic Methods to Circuit Design: An Overview**
Huelsman, Lawrence, *University of Arizona;* Konczylowska, Agnieska, *Laboratoire de Bagneux;* Hassoun, Marwan, *Iowa State University*

MAA9-2 **Exploring Data Conversion Architectures by Symbolic Computation**
Franca, J.E., *IST Center for Microsystems* and Horta, N.C., *Faculdade de Ciencias e Tecnologia*

MAA9-3 **A Symbolic Approach for Testability Evaluation in Fault Diagnosis of Nonlinear Analog Circuits**
Manetti, Stefano; Fedi, G.; and Piccirilli, M.C., *University of Florence*

MAA9-4 **Symbolic Analysis of Microwave Circuits**
Alquie, G., *LEAM, Universite Pierre et Marie Curie;* Boukadoum, M., *Universite du Quebec a Montreal;* Vasilescu, G., *LEAM, Univ. Pierre et Marie Curie;* Benboudjema, Kamel, *Com Dev Ltd.*

MAA9-5 **Behavioral Modeling of Analog Blocks Using Symbolic Analysis**
Fernandez, Francisco and Rodriguez-Vazq, Angel, *Centro Nacional de*uez *Microelectronica*

MAA9-6 **Efficient Statistical Analog IC Design Using Symbolic Methods**

Leyn, F. and Debyser, Geert, *Katholieke Universiteit Leuvan;* Styblinsky, M., *Texas A&M University;* Gielen, G., *Katholieke Universiteit Leuvan*

MAA9-7 **Approximate Symbolic Pole/Zero Extraction Using Equation-Based Simplification Driven by Eigenvalue shift Prediction**
Wiese, Michael; Sommer, Ralk, and Hennig, Eckhard, *Institute of Industrial Mathematics (ITWM)*

MAA9-8 **Efficient Symbolic Analysis of Large Circuits Using Sensitivity-Driven Ranking of Matroid Intersections**
Wambacq, Piet, *Katholieke Universiteit Leuvan;* Dobrovlny, Petr, *Technical University Brno;* Gielen, G. and Sansen, Willy, *Katholieke Universiteit Leuvan*

MAA10 Low Power Digital Circuit Design - Lecture

Professor Naresh Shanbhag, *University of Illinois*

MAA10-1 **Analytical Expressions for Average Bit Statistics of Signal Lines in DSP Architectures**
Bobba, Sudhakar, *University of Illinois;* Shanbhag, Naresh, *University of Illinois at Urbana-Champaign;* Hajj, Ibrahim, *University of Illinois*

MAA10-2 **Architecture Selection of a Flexible DSP Core Using Reconfigurable System Software**
Park, Kyu-Ho; Lee, Jong-Yeol; Kim, Jong-Sun; Lee, Yong-Hoon; Kyung, Chong-Min; Lee, Dae-Hyun; Yoon, Hyun-Dhong; Hwang, and Seung H., *Korea Advanced Institute of Science and Technology*

MAA10-3 **Analyzing Effects of Cache Parameters on Memory Power Consumption of Video Algorithms**
Kanpoor, Bhanu, *Texas Instrument Inc.*

MAA10-4 **Transformational Based Synthesis of VLSI Based DSP Systems for Low Power Using a Genetic Algorithm**
Bright, M.S. and Arslan, T., *Cardiff University of Wales*

MAA10-5 **Power Estimation Using Input/Output Transition Analysis**
Lucke, Lori E.; Lee, Junsoo; and Vinnakota, Bapi, *University of Minnesota*

MAA10-6 **Fast Delay-Dependent Power Estimation of Large Combinational Circuits**
Jou, Jer-Min and Chen, Pei-Yin, *National Cheng Kung Univ.*
Wang, Michelle, *University of Southern California*

MAA10-7 **Resynthesis of sequential circuits for low power**
Banerjee, Prithviraj, *Northwestern University*

MAA10-8 **STG Optimization for Power and Area Reduction**
Koufopavlou, Odysseas and Panagiotaras, George, *VLSI Design Laboratory*

MAA11 VLSI Circuits for Multimedia Sig. Proc. – Special Session

Professor Magdy Bayoumi, *University of Southwestern Louisiana*

MAA11-1 **A Paradigm for Collaboration Across a Globally Networked Environment: Implementation of ISCAS '98 Internet Services**
McEachen, John and Coffman, James, *Naval Postgraduate School*

MAA11-3 **Flexible MPEG Audio Decoder Layer III Chip Architecture**
Neinhaus, H.; Ranganathan, N.; Moreno, W. and Singh, P., *University of South Florida*

MAA11-4 **Low Power 2D DCT Chip Design for Wireless Multimedia Terminals**

Chen, Liang-Gee, *National Taiwan University*

MAA11-5 **Influences of Object Based Segmentation onto Multimedia Hardware Architectures**
Ohmacht, Martin; Pirsch, Peter and Wittenburg, Jens P., *University of Hannover*

MAA11-6 **On the Impact of Multimedia Coding Algorithms to Architectures**
Chen, Tsuhan, *Carnegie Mellon University*

MAA11-7 **Providing Multicast Video on Demand Using Native-Mode Asynchronous Transfer Mode**
Kang, Sung Mo; Hiltenbrant, John; Hossain, Ashfaq and Lockwood, John, *University of Illinois*

MAA11-8 **Architectures for the 3-D Discrete Wavelet Transform**
Weeks, Michael and Bayoumi, Magdy, *University of Southwestern Louisiana*

MAA12 VLSI Digital Circuits – Lecture

Professor Yvon Savaria, *Ecole Polytechnique, Montreal*

MAA12-1 **Design of Low Power Differential Logic Using Adiabatic Switching Technique**
Lo, Chun-Keung and Chan, Philip C.H., *The Hong Kong University of Science and Technology*

MAA12-2 **Ultra Low-Voltage Digital Floating-Gate UVMOS (FGUVMOS) circuits**
Lande, Tor Sverre; Wisland, Lande; Berg, Yngvar; Wisland, Dag T. and Mikkelsen, Sindre, *University of Oslo*

MAA12-3 **Single Ended Swing Restoring Pass Transistor Cells for Logic Synthesis and Optimization**
Pihl, Johnny, *Royal Melbourne Institute of Technology*

MAA12-4 **Edge Reversal-Based Asynchronous Timing Synthesis**
Granja, Edson and Franca, Felipe, *COPPE/Univ Federal do Rio de Janeiro*

MAA12-5 **A New True-Single-Phrase-Clocking (TSPC) BiCMOS Dynamic Pipelined Logic**
Tseng, Yuh-Kuang, *National Chiao-Tung University;* Wu, C., *City University of Hong Kong*

MAA12-6 **Low Voltage BiCMOS TSPC Latch for High Performance Digital Systems**
Nikolic, Borivoje and Oklobdzija,Vojin G., *University of California - Davis*

MAA12-7 **Low ringing I/O buffer design**
Carro, Luigi and Bego, Lauro J., *Universidad Federal do Rio Grande do Sul*

MAA12-8 **CMOS Circuit Design of Threshold Gates with Hysteresis**
Fant, Karl and Sobelman, Gerald E., *Theseus Logic, Inc.*

MAA13 Communications Circuits - Poster

Professor Robert H. Caverly, *Villanova University*

MAA13-1 **Nonlinear Properties of Gallium Arsenide and Silicon**
Caverly, Robert H., *Villanova University*

MAA13-2 **A 3-V 45-mW CMOS Differential Bandpass Amplifier for GSM Receivers**
Luong, Howard C. and Leung, David, *The Hong Kong University of Science and Technology*

MAA13-3 **Gb/s Encoder/Decoder Circuits for Fiber Optical Links in Si-Bipolar Technology**
Tenhunen, Hannu, *Royal Institute of Techology;* Djupsjobacka,

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Anders, *Ericsson Components AB;* Ellervee, Peter; Schuppener, Gerd; Juhola, Tarja, and Mokhtari, Mehran, *Royal Institute of Technology*

MAA13-4 **A Comparative Analysis of CMOS Low Noise Amplifiers for RF Applications**
Mayaram, Kartikeya and Ge, Yongmin, *Washington State University*

MAA13-5 **Characterization of Micromachined CMOS Transmission Lines for RF Communications**
Milanovic, Veljko and Ozgur, Mehmet, *NIST*

MAA13-6 **A 2.0-GHz Submicron CMOS LNA and a Downconversion Mixer**
Halonen, Kari A. and Litmanen, Petteri, *Helsinki University of Technology*

MAA13-7 **Easy Simulation and Design of On-Chip Inductors in Standard CMOS Processes**
Joergensen, Allan and Christensen, Kaare, *Technical University of Denmark*

MAA13-8 **Programmable Low Noise Amplifier with Active Inductor Load**
Zhuo, Wei; Sanchez, Edgar and Pineda, Jose, *Texas A&M Univ.*

MAA13-9 **Electromechanical Properties of a Micromachined Varactor With a Wide Tuning Range**
Dec, Alezsande and Suyama, Ken, *Columbia University*

MAA13-10 **A low voltage design technique for low noise RF integrated circuits**
Manku, Tajinder and Abou-Allam, Eyad, *University of Waterloo*

MAA13-11 **A 1.8 GHz CMOS quadrature voltage-controlled osculator (VCO) using the constant current LC ring oscillator structure**
Kao, Hong-sing and Wu, Chung yu, *National Chiao Tung U.*

MAA13-12 **Low Voltage, 2X2, 25 Gb/s Crosspoint Switch in InP-HBT Technology**
Swahn, Thomas, *Ericsson Microwave Systems AB* and Juhola, Tarja, *Royal Institute of Technology;* Walden, Robert H., *Hughes Research Laboratories* and Mokhtari, Mehran; Kerzar, Boris; Schuppener, Gerd;and; and Tenhunen, Hannu, *Royal Inst. of Tech.*

MAA13-13 **A CORDIC-based Digital Quadrature Mixer: Comparison with a ROM-based Architecture**
Nahm, Seunghyeon and Sung, Wonyong, *Seoul National Univ.*

MAA13-14 **Reconfigurable Signal Processing ASIC Architecture For High Speed Data Communications**
Grayver, Eugene and Daneshrad, Babak, *UCLA*

MAA13-15 **Dual-loop DSP-PLL with Wide Frequency Acquisition Range and Fast Frequency Acquisitionn**
Obote, Shigeki, *Tottori University;* Fukui, Yutaka; Sumi, Yasusaki, and Syoubu, Kouichi, *Totttori Sanyo Electric Co Ltd.;* Itoh, Yoshio, *Tottori University*

MAA13-16 **Pipelined Arrays for Modular Multiplication**
Ciminiera, Luigi, *Politecnico di Torino*

MAA13-17 **Distortion and Noise Performance of Bottom-Plate Sampling Mixers**
Yu, Wei and Leung, Bosco, *University of Waterloo*

MAA13-18 **A Digital Frequency Modulator Circuit for a Dual-Mode Cellular Telephone**
Niemisto, Matti and Lahti, Jukka A., *University of Oulu*

MAA13-19 **Design of a 2.4 GHz CMOS Frequency-Hopped RF Transmitter IC**
Koli, Kimmo J.; Waltari, Mikko E.; Sumanen, Lauri; Kosunen, Marko; Vankka, Jouko K.; and Halonen, Kari; *Helsinki University of Technology*

MAA13-20 **A Bipolar Semi Custom PLL Based Synthesizer for GSM and DCS Systems**
Kostamovaara, Juha; Rahkonen, Timo; and Hakkinen, Juha, *University of Oulu*

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MAA13-21 **Adaptive FEC on a ReConfigurable Processor for Wireless Multimedia Communications**
Arrigo, Jeanette F.; Page, Kevin J.; Chau, Paul; and Wang, Yuhe, *University of California - San Diego*

MAA13-22 **Low power,Low-Phase-noise,Cmos voltage-controlled oscilattor with Integrated Lc Resenator**
Park, Byeoung-ha and Allen, Phillip E., *GA Tech, Rockwell Semiconductor Systems*

MAA13-23 **PLL Frequency Synthesizert with Multi-Programmable Divider**
Fukui, Yutaka; Obote, Shigeki; Sumi, Yasuaki; and Syoubu, Kouichi, *Totttori Sanyo Electric Co Ltd*

MAA13-24 **A 3.3V 600MHz-1.30 GHz CMOS Phase-Locked Loop for Clock Synchronization of Optical Chip-to-Chip Interconnects**
Sheen, and Chen, Oscal T.-C., *National Chung Cheng University*

MAA14 Circuits and Power Systems I - Poster

Professor Graham R. Hellestrand, *University of New South Wales, Australia*

MAA14-1 **Amplitude Bounds on oscillations from a Sigma-Delta Modulator structure**
Davies, Anthony C., *King's College London*

MAA14-2 **Global Synchronization in Coupled Map Lattices**
Wu, Chai Wah, *IBM Thomas J. Watson Research Center*

MAA14-3 **On-off Intermittency from a Ring of Four Coupled PLLs**
Endo, Tetsuro, *Meiji University* and Komuro, Motomasa, *Teikyo University of Science & Technology;* Hasegawa, Akio and Igarashi, Ryo, *Faculty of Science & Technology, Meiji University*

MAA14-4 **Performance comparison of communication systems using chaos synchronization**
Dedieu, Herve, *Swiss Federal Institute of Technology;* Nishio, Yoshifumi, *Tokushima University;* Kawata, Junji, *Tokushima Bunri University;* Ushida, Akio, *Tokushima University*

MAA14-5 **Synchronization in Chaotic Oscillators Based on Classical Oscillator Coupled by One Resister**
Sekiya, Hiroo; Sasase, Iwao; Mori, Shinsaku; and Moro, Seiichiro, *Keio University*

MAA14-6 **Neural-network based adaptive control of uncertain chaotic systems**
Qin, Huashu, *Chinese Academy of Science;* Chen, Guanrong, *University of Houston;* Zhang, Huaizhou, *Chinese Academy of Science*

MAA14-7 **(+/-)1.5V 0.36G-1.6GHz BiCMOS**
Huang, Yan-ping, *National Taiwan University;* Chen, Pei-Yin, *National Cheng Kung Univ.;* LI, Simon, *National Yunlin University of Science and Tech*

MAA14-8 **Time Domain Analysis of Modulated Carriers in (Non)-Linear systems**
Leenaerts, D., *Technical University Eindhoven*

MAA14-9 **Singularities of implicit ordinary differential equations**
Reissig, Gunther, *Techn. University Dresden;* Boche, Holger, *Heinrich-Hertz-Institut*

MAA14-10 **Useful Necessary and Sufficient Condition for Reachability of Extended Marked Graphs**
Tsuji, Kohkichi, *Aichi Prefectural University*

MAA14-11 **Calculation of the Homoclinic Bifurcation Sets of PLL Equation with Five-Segment Piecewise-Linear Phase Detector characteristic**
Endo, Tetsuro and Ohno, Wataru, *Meiji University*

MAA14-12 **Algorithm for Non-Intrusive Identification of**

Residential Appliances
Albicki, Alexander and Cole, Agnim I., *University of Rochester*

MAA14-13 **The resolution of algebraic loops in the simulation of finite-inertia power systems**
Ashton, Robert and Ciezki, John G., *Naval Postgraduate School*

MAA14-14 **On stability robustness of discrete-time systems: The complex-variable approach of Mastorakis**
Lu, W.-S., *University of Victoria*

MAA14-15 **Phase Jitter Dynamics of Second-Order DPLLs**
Rogers, Alan R. and Feely, Orla, *University College Dublin*

MAA14-16 **Analysis of the dc link current spectrum in force commutated inverters**
Mariscotti, Andrea, *Dipartimento Ingegneria Elettrica*

MAA14-17 **On The Modelling of A Chaotic Circuit Containing A Bent Hysteresis Resistor**
Chengquan, Xia, *Xian Jiaotong University*

MAA14-18 **Time-Delay Neural Networks, Volterra Series, and Rates of Approximation**
Sandberg, Irwin, *The University of Texas at Austin*

MAA14-19 **Topological Dimensionality Determination and Dimensionality Reduction Based on Minimum Spanning Trees**
Oten, Remzi and de Figueiredo, Rui, *Univ. of California-Irvine*

MAA14-20 **Investigations of periodic orbits in electronic circuits with interval Newton's method**
Galias, Zbigniew, *University of Mining and Metallurgy*

MAA14-21 **Stability Analysis and Robust Stabiliaztion of a Class of Nonlinear Based on Stability RADII**
Jannesari, Saeid, *Wichita State University*

MAA14-22 **The Design and Fabrication of a Reconfigurable Hardware Testbed for the Interaction Analysis of Power Converters in a Reduced-Scale Navy DC Distribution**
Ashton, Robert, *Naval Postgraduate School*

MAA14-23 **A Computer program for accurate time-domain analysis of 1D arrays of Chua's oscillators**
Premoli, A.; Maio, I.; Biey, Mario; and Gilli, Marco, *Politecnico di Torino*

MAA14-24 **The Analysis of Tradeoffs Between Power Section Hardware and Feedback Gains for a DC Distribution System DC-to-DC Converter**
Ciezki, John G. and Ashton, Robert, N*aval Postgraduate School*

MAA15 Analog Filters - Poster

Professor Phillip E. Allen, *Georgia Institute of Technology*

MAA15-1 **Distortion Analysis of Switched-Current Circuits**
Moschytz, George S. and Helfenstein, Markus, *Swiss Federal Institute of Technology*

MAA15-2 **Distortion analysis of MOSFETs for application in MOSFET-C circuits**
Schneider, Marcio C. and Galup-Montoro, Carlos, *Universidade Federal de Santa; Catarina*; Acosta, Simone, *Centro Federal de Educacao Tecnologica do Parana* Cunha; Ana A., *Universidade Federal da Bahia*

MAA15-3 **Design and Implementation of an Algorithmic S2I Switched Current Multiplier**
Manganaro, Gabriele and de Gyvez, Jose Pineda, *Texas A&M University*

MAA15-4 **Simulation of Coupled Tuned Circuits Using CFOAs**
Aronhime, Peter and Deng, Jie, *University of Louisville* and

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Maundy, Brent, *University of Calgary*

MAA15-5 **Improved Fully Differential Circuits Using Hybrid Structures**
Walker, Paul D., *Silicon Systems* and Green, Michael, *University of California*

MAA15-6 **Feasible Designs for High Order Switched-Current**
Ng, A.E. and Sewell, I., *University of Glasgow*

MAA15-7 **Accurate CMOS Switched-Current Divider Circuits**
Wey, Chin-Long and Wang, Jin-sheng, *Michigan State University*

MAA15-8 **Fundamental Frequency Limitations in Current-Mode Sallen-Key Filters**
Moschytz, George S. and Schmid, Hanspeter, *Swiss Federal Institute of Technology*

MAA15-9 **BiCMOS OTA high Q very high frequency continuous-time bandpass filters**
Minot, Sophie and Degrugilli, Dominique, *ENST de Bretagne*

MAA15-10 **Automatic Tuning of Frequency and Q-Factor of Bandpass Filters Based on Envelope Detection**
Schaumann, Rolf and Karsilayan, Aydin I., *Portland State University*

MAA15-11 **A CMOS Multiplier/Divider based on Current Conveyors**
Premont, Christophe and Cattet, Stephane *CPE Lyon*

MAA15-12 **Reducing Spread Resistance in High Q State Variable Filters**
Silva-Martínez, Jose; Espinosa, Guillermo; and Báez-López, David, *Instituto Nacional de Astrofisica, Optica y Electr*

MAA15-13 **Low Voltage S2I and S3I Cells for Sigma-Delta Processing**
Simek, Petr, *Technical University of Brno*

MAA15-14 **Two-step current-memory cells with optimal dynamic range for advanced CMOS technologies**
Kaiser, Andreas K., *IEMN-ISEN*

MAA15-15 **A 4-Transistor Euclidean Distance Cell for Analog Classifiers**
Cilingirogl, Ugur and Aksin, Devrim Y., *Istanbul Technical University*

MAA15-16 **Multiple-Input Translinear Element Networks**
Diorio, Chris, *University of Washington;* Hasler, Paul E., *Georgia Institute of Technology;* Minch, Bradley A., *Cornell University*

MAA15-17 **UCM - Universal Current-mode Structures**
Galvez-Durand, Federico, *Universidade Federal do Rio de Janeiro*

MAA15-18 **Generation of Canonic Multiple Current Output OTA Sinusoidal Oscillators with Non-Interacting Controls**
Fidler, J.K. and Tao, Yufei, *University of York*

MAA15-19 **Very Low-Distortion Fully Differential Switched-Current Memory Cell**
Martins, Jorge; Dias, Victor F., and Piedade, Moisés, *Instituto Superior Técnico / INESC*

MAA15-20 **Reliable Analog Bandpass Signal Generation**
Veillette, Benoit R., *McGill University* and Roberts, Gordon, *MACS Laboratory, McGill University*

MAA15-21 **Noise Analysis of Switched Current Circuits**
Bogason, Gudmundu, and Jorgensen, Ivan H., *OTICON A/S*

MAA15-22 **Phase-Tunable CMOS Triode Transconductor**
Jun, Sibum, Pohang University of Science and Technoloy

MAA15-23 **Efficient Design of Switched-Current Lowpass Elliptic Wave Filters Using Bruton Transformation**
Al-hashimi, B.; Lancaster, Jason, and Moniri, M., *Staffordshire University*

MAA15-24 **Ladder Decompositions for Wideband Si Filter Applications**
Sewell, J.I. and Ng, A. E., *University of Glasgow*

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MPA1 Multidimensional Signal Processing – Lecture

Professor M. Omair Ahmad, *Concordia University, Montreal, Canada*

MPA1-1 **Symmetry in the Frequency Response of Two-Dimensional Complex Plane Discrete-Time**
Stubberud, Allen R., *University of California-Irvine;*Reddy, Hari C., *CSU Long Beach;* Rajan, P.K.; *Tennessee Tech University;* Khoo, I-Hung, *University of California-Irvine*

MPA1-2 **FPGA Implementation of Hierarchical Clustering Algorithms**
Bitter, Doug and Niamat, Mohammed Y., *The University of Toledo*

MPA1-3 **Multidimensional digital filter approach for numerical solution of PDEs of the propafating type**
Basu, Sankar, *IBM T. J. Watson Research Center*
Zerzghi, Amanuel, *Lucent Technologies*

MPA1-4 **On q-Markov Covers for 2-D Separable Denominator Systems**
Sreeram, V., *University of Western Australia*
Agathoklis, Pan, *University of Victoria*

MPA1-5 **Weighted L2 Sensitivity Minimization of 2-D Discrete Systems**
Lu, W.-S., *University of Victoria*; Hinamoto, Takao and Yokoyama, Shuichi, *Hiroshima University*

MPA1-6 **The Two Dimensional Lapped Hadamard Transform**
Kiya, Hitoshi; Yamada, Akihiko and Muramatsu, Shogo, *Tokyo Metropolitan University*

MPA1-7 **A New 2-D Adaptive Filter Using Affine Projection Algorithm**
Hinamoto, Takao and Muneyasu, Mitsuji, *Hiroshima University*

MPA1-8 **A Stability Test of Reduced Complexity for 2-D Digital System Polynomials**
Bistritz, Yuval, *Tel Aviv University*

MPA2 Optimization of Subband Coders Based on the Input - Special

Professor P. P. Vaidyanathan, *California Institute of Technology*

MPA2-1 **Enhancing the Performance of Subband Audio Coders for Speech Signals**
Malvar, H., *Microsoft Research*

MPA2-2 **Optimized Orthogonal and Biorthogonal Wavelets Using Linear Parameterization of Halfband Filters**
Antoniou, Andreas and Lu, W.S., *University of Victoria*

MPA2-3 **Design Methodology for Signal Adapted Biorthogonal Filter Banks**
Anitescu, M., *Argonne National Laboratories*; Moulin, Pierre and Ramachandran, Kannan, *University of Illinios at Urbana-Champaign*; Yang, Y., *University of New Mexico*

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MPA2-4 **Post-Processing of Compressed Images with Side Information**
Nosratinia, Aria, *Rice University*

MPA2-5 **A Survey of the State-of-the-Art and Utilization of Embaedded, Tree-Based Coding**
Pearlman, William, *Rensselaer Polytechnic Institute*; Said, Amir, *Iterated Systems, Inc.*

MPA2-6 **A Performance Study of DCT and Subband Image CODECS with Zero-Zone Quantizers**
Ramkumar, M. and Akansu, A., *New Jersey Institute of Technology*

MPA2-7 **The Role of the Discrete-Time Kalman-Yakubovitch-Popov (KYP) Lemma in Designing Statistically Optimum FIR Orthonormal Filter Banks**
Vaidyanathan, P.P. and Tuqan, Jamal, *California Institute of Technology*

MPA2-8 **Design of Paraunitary Filter Banks with Suboptimal Coding Gain Without Nonlinear Optimization**
Nguyen, Truong Q., *Boston University*; Ikehara, M., *Keio University*

MPA3 Memory, Adaptation and Learning – Special Session

Professor Gert Cauwenberghs, *The Johns Hopkins University*

MPA3-1 **A Four-Quadrant Floating-Gate Synapse**
Diorio, Chris, *U. Washington*; Minch, Bradley A., *Cornell University*; Hasler, Paul E., *Georgia Institute of Technology*

MPA3-2 **Programmable Current Mode Hebbian Learning Neural Network Using Metalization Programmable Cells**
Swaroop, B.; Kozicki, M., and Akers, Lex A., *University of Texas at San Antonio*

MPA3-3 **Two-Dimensional Silicon Retina with Adaptive Filtering Properties**
Liu, Shih-Chii, *California Institute of Technology*

MPA3-4 **Design of a Programmable Pulse-Coded Neural Processor for Hippocampal Region**
Tsai, R.H.; Sheu, Bing J., and Berger, T., *University of Southern California*

MPA3-5 **A Robust Hybrid Neural Architecture for an Industrial Sensor Application**
Maclean, B.; Miller, W.C.; Ahmadi, M.; Jullien, G.A., and Djahanshahi, H., *University of Windsor*

MPA3-6 **Design of an Analog CMOS Self-Learning Multilayer Perception Chip**
Chibli, H.; Caviglia, D.D.; Bo, G., and Valle, M., *University of Genoa*

MPA3-7 **Hardware Compatible Learning for Neuro-Fuzzy Controllers**
Rodriguez-Vazquez, A., *CNM*; Navas-Gonzale, R., *University of Sevilla*; Vidal-Verdu, F., *University of Malaga*

MPA3-8 **On-Line Modeling and Control Using a CMOS Analog Temporal Neuroprocessor**
Salam, F., *Michigan State University*

MPA3-9 **A Micropower Learning Vector Quantizer for Parallel Analog-to-Digital Data**
Cauwenberghs, G. and Lubkin, J., *Johns Hopkins University*

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MPA4 Multimedia Systems and Processing – Lecture

Professor Bing Sheu, *University of Southern California* and Professor Ramalingam Sridhar, *State University of New York, Baffalo*

MPA4-1 **Dynamic Scheduling with Maximum Delay Guarantee for Near Video-on-Demand**
Chan, Shueng-Han G. and Ko, Tsz-Mei, *The Hong Kong University of Science and Technology*

MPA4-2 **A Low-Cost Architecture Design with Efficient Data Arrangement and Memory Configuration for MPEG-2 Audio Decoder**
Chen, Liang-Gee and Tsai, Tsung-Han, *National Taiwan University*

MPA4-3 **Real-time Digital Video Stabilization for Multi-media Applications**
Ratakonda, Krishna, *University of Illinois at Urbana-Champaign*

MPA4-4 **Scaleable Image Sensor/Processor Architecture with Frame Memory Buffer and 2-D Celluar Neural Network**
Park, Yoondong; Cho, Kwang-Bo; and Sheu, Bing J,, *University of Southern California*

MPA4-5 **The BJT-based silicon-retina sensory system system for direction and velocity selective sencing**
Wu, Chung-yu and Jiang, *Institute of Electronics,National Chiao-Tung University*

MPA4-6 **New View Generation from a video Sequence**
Hang, Hsueh-Ming and Chen, Sze-sheng, *National Chiao-Tung University*

MPA4-7 **A fast approach to detecting human faces in a complex background**
Lam, Kenneth, *Hong Kong University*

MPA4-8 **A Memory Based Algorithm for Real-Time Convolution with Variable Kernels**
Tamaru, Keikichi; Suzuki, Kazuhiro, and Moshnyaga, Vasily G., *Kyoto University*

MPA5 Equalization/Modulation/Decoding - Lecture

Dr. Simone Fiori and Professor Francesco Piazza, *University of Ancona, Italy*

MPA5-1 **A Novel Reinitialization Method for Successive Blind Equalization of MIMO Communication Channel**
Yau, Sze Fong, *The Hong Kong University of Science and Technology;* Ma, Chor Tin, *The Hong Kong University*

MPA5-2 **Combined Carrier Phase Tracking and Equalization for pi/4-DQPSK Signals in Mobile Radio**
Liu, Der-Zheng and Wei, Che-Ho, *National Chiao Tung University*

MPA5-3 **Narrow-Band Interference Rejection in OFDM-CDMA Transmission System**
Hsieh, Meng-Han and Wei, Che-Ho, *National Chiao Tung University*

MPA5-4 **Blade: A New On-line Blind Equalization Method Base on the Burelian Distortion Measure**
Piazza, Francesco, and Fiori, Simone, *University of Ancona*

MPA5-5 **A Parallel Decoding Scheme for Turbo Codes**
Wang, Chin-Liang and Hsu, Jah-ming, *National Tsing Hua University*

MPA5-6 **Efficient Management of In-Place Path Metric Update and its Implementation for Viterbi Decoders**
Shieh, Ming-Der, *National Yunlin Institute of Tech*

MPA5-7 **Three-dimensional equalization for the 3-D QAM**

system with strength reduction
Shalash, Ahmed F. and Parhi, Keshab K., *University of Minnesota*

MPA5-8 **A new Polynomial Structura for channel equalization and ACI Suppression in 64-QAM Reception**
Saini, J.P. and Srivastava, M.C, *Kamla Nehru Institue of Technology*

MPA6 Circuit Techniques for Wireless Applications - Lecture

Professor Martin Snelgrove, *Carleton University*

MPA6-1 **A 1.8 GHz Subsampling CMOS Downconversion Circuit for Integrated Radio Circuits**
Eriksson, Patrik; Cijvat, Ellie; and Tenhunen, Hannu, *Royal Institute of Techology* Tan, Nianxiong, *Ericsson Components*

MPA6-2 **A CMOS sampling data system for IF-to-baseband demodulation and filtering**
Baschirotto, Andrea, *Universita' di Pavia*

MPA6-3 **1.8 GHz CMOS LNA with On-Chip DC-Decoupling for a Subsampling Direct Conversion Front-End**
Lindfors, Saska J.; Parssinen, Aarno T.; Halonen, Kari A. and Ryynanen, Jussi H., *Helsinki University of Technology*

MPA6-4 **Asic for 1-ghz Wide Band Monobit Receiver**
Chen, Henry, *Wright State University*

MPA6-5 **RF Low-Noise Amplifiers**
Silva-Martinez, Jose and Carreto-Castro, Flora, *I.N.A.O.E.*

MPA6-6 **A Low Power, Wide Linear-Range CMOS Voltage-Controlled Oscillator**
Rhee, Woogeun, *Rockwell Semiconductor Systems, Inc.*

MPA6-7 **A Low-Power CMOS Frequency Synthesizer Design Methodology for Wireless Applications**
Fahim, Amr and Elmasry, Mohamed I., *University of Waterloo*

MPA6-8 **A New CMOS Cellular Oscillator Network for Wireless RF Transceivers**
Kim, Hong-Sun, *The Ohio State University*
Moon, Gyu, *The Ohio State University*

MPA7 Linear Circuits - Lecture

Dr. Isao Shirakawa, *Osaka University, Japan*

MPA7-1 **Flow Problems on Information Network**
Watanabe, Hitoshi; Takatama, Hirokazu, and Shinomiya, Norihiko, *Soka University*

MPA7-2 **Hybrid Matrix Minors from Tableaux Applied to a Multiport Generalization of NDR Related to Stability**
Chaiken, Seth, *State University of New York at Albany*

MPA7-3 **Methods for automatic design of analog circuits**
Shafir-Bakhtiar, Mahrdad, and Shojaei, M.

MPA7-4 **Modified Nodal Formulation Method Applied to Piecewise-Linear DC Analysis**
Roos, Janne and Valtonen, Martti, *Helsinki University of Technology*

MPA7-5 **N-Port Reciprocity and Irreversible Thermodynamics**
Weiss, Laurens and Mathis, Wolfgang, *Otto-von-Guericke-Universitaet Magdeburg*

MPA7-6 **NARX approach to black-box modeling of circuit elements**
Canavero, Flavio G.; Stievano, Igor S., and Maio, Ivan A., *Politecnico di Torino*

MPA7-7 **The General Method of Feedback Amplifier Analysis**
Nikolic, Borivoje, *University of California*; Marjanovic, Slavoljub, *University of Belgrade*

MPA7-8 **The index of the standard circuit equations of passive**

RLCTG-networks does not exceed 2
Reiszig, Gunther, *TU Dresden*

MPA8 Continuous-Time Filters - Lecture

Professor Jaime Ramirez-Angulo, *New Mexico State Univeristy*

MPA8-1 **Design of a CMOS Fully-Differential Continuous-Time Tenth-Order Lowpass Filter Based on IFLF Topology**
Chiang, David H. and Schaumann, Rolf, *Portland State University*

MPA8-2 **An Eighth-Order UHF Band Pass Filter using Silicon Bipolar Active Inductors**
Leong, Choon Haw and Roberts, Gordon, *MACS Laboratory, McGill University*

MPA8-3 **An Autozeroing Floating-Gate Bandpass Amplifier**
Diorio, Chris, *University of Washington*; Hasler, Paul E., *Georgia Institute of Technology*; Minch, Bradley A., *Cornell University*

MPA8-4 **A Novel Loss Control Feedback Loop For Vco Indirect Tuning of Rf Integrated Filters**
Tsividis, Yannis, *Columbia University*
Li, S., *Sarnoff Corporation*

MPA8-5 **A 2V Low-Distortion Biquadratic Cell**
Python, Dominique and Enz, Christian, *Swiss Federal Institute of Technology (EPFL)*

MPA8-6 **Analysis of Noise and Interference in Companding Signal Processors**
Toth, Laszlo, *Lucent Technologies Inc.*; Tsividis, Yannis and Krishnapura, Nagendra, *Columbia University*

MPA8-7 **Fundamental Limits to the Dynamic Range of Integrated Continuous-Time Integrators**
Moreira, Jose P., *INESC*; Verhoeven, Chris J., *T.U. Delft*

MPA8-8 **Impedance Scalers for IC Active Filters**
Silva-Martinez, Jose, *I.N.A.O.E.*

MPA9 High Speed Communication Circuits – Lecture

Professor R. Jacob Baker, *University of Idaho*

MPA9-1 **A Phase Detector with No Dead Zone and a Very Wide Output Voltage Range Chargepump**
Ahola, Rami and Halonen, Kari A., *Helsinki University of Technology*

MPA9-2 **A 150Mbit/s CMOS clock recovery PLL including a new improved phase detector and a fully integrated FLL**
Halonen, Kari A. and Routama, Jarkko A., *Helsinki University of Technology*

MPA9-3 **Low Noise Clock Synthesizer Design using Optimal Bandwidth**
Kim, Beomsup; Lim, Kyoohyun, and Park, Chan-Hong, *Korea Advanced Institute of Science and Technology*

MPA9-4 **A Low Jitter 1.25GHz CMOS Analog PLL for Clock Recovery**
Wu, Lin and Black, William C., *Iowa State University*

MPA9-5 **A Modified Costas Loop for Clock Recovery and Frequency Synthesis**
Geiger, Randall and Amourah, Mezyad, *Iowa State University*

MPA9-6 **Effects of Random Jitter on High-Speed CMOS Oscillators**
Geiger, Randall and Chen, Yiqin, *Iowa State University*

MPA9-7 **A novel ring-oscillator with a very small process and temperature variation**

Routama, Jarkko A. and Halonen, Kari A., *Helsinki University of Technology*

MPA9-8 **Reduction of the 1/f noise induced phase noise in a CMOS ring oscillator by increasing the amplitude of oscillation**
Klumperink, Eric A. M., *MESA Research Institute,University of Twente* and Gierkink, Sander, *University of Twente*

MPA10 Interconnect Modeling and Design - Lecture

Professor Cem Goknar, *University of Illinois*

MPA10-1 **A Universal Closed-loop High-Speed Interconnect Model for Genera Purpose Simulators**
Achar, R. and Nakhla, Michel, *Carleton University*; Li, S., *Sarnoff Corporation*

MPA10-2 **A Novel Technique for Minimum-Order Macromodel Synthesis of High-Speed Interconnect Subnetworks**
Nakhla, Michel and Achar, R, *Carleton University*

MPA10-3 **Multipoint multiport algorithm for passive reduced-order model of interconnect networks**
Yu, Qingjian; Wang, Janet M.L., and Kuh, Ernest S., *Univ. of California at Berkeley*

MPA10-4 **Applications of Complex Frequency Hopping Method in PCB Signal Integrity Simulation**
Mu, Z., *Cadence Design Systems*

MPA10-5 **Time Domain Method for Reduced Order Synthesis of Large RC Circuits**
Batterywala, Shabbir H. and Narayanan, H., *Indian Institute of Technology Bombay*

MPA10-6 **CMOS Inverter Current and Delay Model Incorporating Interconnect Effects**
Hafed, Mohamed and Rumin, Nicholas C., *McGill University*

MPA10-7 **PATH RESIZING BASED ON INCREMENTAL TECHNIQUE**
Azemard, Nadine; Auvergne, Daniel, and Cremoux, Severine, *LIRMM*

MPA10-8 **Substrate Coupling Analysis and Simulation for an Industrial Phase-Locked Loop**
Welch, Ryan J., *Wright-Labs* and Yang, Andrew T., *University of Washington*

MPA11 Multi Sensor Data Fusion: Application and Issues - Special

LCDR Sean Midwood, *Canadian Navy*

MPA11-1 **An Introduction to Multisensor Data Fusion**
Llinas, James, *State University of New York at Buffalo*

MPA11-2 **Perspectives on the Progress of Data Fusion for Soliders**
Hall, David L., *Penn State University*

MPA11-3 **Multisensor Data Fusion Algorithm for the USCG's Vessel Traffic Services System**
Glenn, Ian, *Canadian Army*; Midwood, Sean, *Canadian Navy*

MPA11-4 **Managing the Development of MSDF Systems for Use in Joint and Coalition Warfare**
White, Frank E., *SPAWAR Systems Center*

MPA11-5 **Microsimulation as a Tool for Target Tracking in Terrain**
Brown, Donald E., *University of Virginia*

MPA11-6 **Imagery and Terrain-Based DF, Involving Spatial Imagery with Application to Information Warfare**
Waltz, Ed, *ERIM International*

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MPA11-7 **Statistical Approaches to MSDF Problems**
Irving, William, *AlphaTech*

MPA11-8 **Dynamic Multisource Information Fusion**
Flank, Steven, *DARPA-ISO*

MPA11-9 **The Canada-Netherlands Collaboration on Multisensor Data Fusion and Other Canada-NATO MSDF Activities**
Bosse, Eloe, *Defense Research Establishment Valcartier*

MPA12 Power Distriibution Systems - Lecture

Professor David A. Johns, *University of Toronto*

MPA12-1 **A power distributor with winner-take-all function**
Saito, Toshimichi and Mokunaka, Naoki, *Hosei University*

MPA12-2 **A DSP controlled variable-frequency resonant-commutated converter**
Chickamenahalli, Shamala; Liu, Jun, and Nallaperumal, Venkateshwara, *Wayne State University*

MPA12-3 **Inter-harmonics at the output of a converter with time dependent load**
Mariscotti, Andrea, *Dipartimento Ingegneria Elettrica*

MPA12-4 **New Parallel Tabu Search for Voltage and Reactive Power Control in Power Systems**
Hayashi, Takanori and Mori, Hiroyuki, *Meiji University*

MPA12-5 **Power Energy Metering Based on Random Signal Processing**
Franquelo, Leopoldo G., *Escuela Superior de Ingenieros*
Toral, Sergio L.; Quero, Jose M.; Quero, Jose Manuel; and Toral, Sergio, *E.T.S. Ingenieros, Grupo de Tecnologia Electronica*

MPA12-6 **Sensitivity Analysis of Power System Trajectories: Recent Results**
Hiskens, Ian A. and Pai, *University of Illinois at Urbana-Champaign*

MPA12-7 **Contingency Screening using interval analysis in power systems**
Yuihara, Atsushi and Mori, Hiroyuki, *Meiji University*

MPA12-8 **Estimation of Nonsinusoidal Bus Voltage Waveforms in Power Systems**
Gou, Bei and Abur, Ali, *Texas A&M University*

MPA13 Image and Video Processing I - Poster

Dr. Ya-Qin Zhang, *Sarnoff Corporation*
Professor Oscar Au, *Hong Kong Univ. of Science & Technology*

MPA13-1 **A Multi-Transform Approach to Reversible Embedded Image Compression**
Adams, Michael D. and Antoniou, Andreas, *University of Victoria*

MPA13-2 **Dynamic Load Balancing For Distributed Movie-Based Web-Browsing System**
Komatsu, Naohisa; Hiraiwa, Atsunobu; Ikeda, Hiroaki, and Komiya, Kazumi, *Telecommunications Advancement Org. of Japan*

MPA13-3 **The Impact of Encoding Algorithms on MPEG VLSI Implementation**
Cheng, Sheu-Chih; Hang, Hsueh-Ming, and Cheng, Sheu-Chih, *National Chiao-Tung University*

MPA13-4 **Efficient subtree splitting algorithm for wavelet-Based fractal image coding**
Zhang, Huaizhou, *Chinese Academy of Science*
Po, Lai-Man and Lai-Man, Po, *City University of Hong Kong*

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MPA13-5 **Error Resilient Image Coding with Rate-compatible Punctured Convolutional Codes**
Chen, Chang and Cai, Jianfei, *University of Missouri-Columbia*

MPA13-6 **Fast Motion Estimation Based on Total Least Squares for Video Encoding**
Deshpande, Sachin G. and Hwang, J.N., *University of Washington*

MPA13-7 **Error Control for H.263 Video Transmission Over Wireless Channels**
Lin, David, *National Chiao Tung University*
Chen, Pei-Yin, *National Cheng Kung Univ.*

MPA13-8 **Comparsion between Block-based and Pixel-based Temporal Interpolation for Video Coding**
Au, Oscar and Tang, Chi-wah, *The Hong Kong University of Science and Technology*

MPA13-9 **A scalable Hierarchical Motion Estimation Algorithm for MPEG-2**
Chiang, ,Tihao and Song, Xudong, *Sarnoff Corporation*

MPA13-10 **Transform Domain Motion Estimation without Macroblock-based Repetitive Padding for MPEG-4 Video**
Liu, K.J.Ray and Chen, Jie, *University of Maryland*

MPA13-11 **Using a Region-Based Blurring Method and Bits Reallocation to Enhance Quality on Face Region in Very Low Bitrate Video Coding**
Chen, Liang-Gee and Chang, Hao-Chieh, *National Taiwan University*

MPA13-12 **A Novel and Fast Feature Based Motion Estimation Algorithm through Extraction of Background and Object**
Mok, Wai Hung and Yung, H. C. Nelson, *University of Hong Kong*

MPA13-13 **An adaptive arithmetic coding method using fuzzy logic and gray theory**
Jou, Jer-Min and Chen, Pei-Yin, *National Cheng Kung Univ.*

MPA13-14 **An Integrated Classifier in Classified Coding**
Chen, Li, *Shantou University*; Huang, Jiwu, *New Jersey Institute of Technology*

MPA13-15 **Corner Detection Using Gabor-Type Filtering**
Fahmy, M. and Quddus, Azhar, *King Fahd University of Petroleum and Minerals*

MPA13-16 **Detection of Vehicle Occlusion Using a Generalized Deformable Model**
Yung, H. C. Nelson and Lai, Hon Seng, *University of Hong Kong*

MPA13-17 **Error Resilient Coding for JPEG Image Transmission over Wireless Fading Channels**
Chandramouli, R.; Ramadoss, S.J., and Ranganathan, N., *University of South Florida*

MPA13-18 **Novel Error Concealment Techniques for Images in ATM Environments**
Marvasti, Farokh A. and Hasan, Moh'd A., *King's College London, University of London*

MPA13-19 **On the Perceptual Interband Correlation for Octave Subband Coding**
Liu, Chi-Min, *National Chia0 Tung University*

MPA13-20 **Analyzing Memory Bandwith Requirments for Video Applications**
Kapoor, Bhanu, *Texas Instrument Inc.*

MPA13-21 **An Adaptive Network Control Scheme for Region-based Hybrid Coding Algorithm**
Hao-Chieh, Chang, *National Taiwan University*
Tsai, Tsung-Han ,*National Taiwan University*
Hsu-Tung,Chen, *National Taiwan University*
Chen, Liang-Gee, *National Taiwan University*
Huang, Sheng-Chieh, *National Taiwan University*
Chen, Pei-Yin, *National Cheng Kung Univ.*

Chang, Pen-Yiing, *National Tsing-Hua University*
Huang, Yan-ping, *National Taiwan University*

MPA13-22 **On piecewise-quadratic filter for Gaussian noisy image filtering**
Li, Wenzhe, *Universitat Erlangen-Nurnberg*; Lin, Kuang, *Thomson Multimedia*; Unbehauen, Rolf, *Universitat Erlangen-Nurnberg*

MPA13-23 **MPEG-4 accelerator for PC based codec implementation**
Lim, Young-Kwon; Park, Sanggyu, and Kwak, Jinsuk, *Realistic Telecommunications Section, ETRI*

MPA13-24 **Rate Control in Video Coding by Adaptive Mode Selection**
Ryu, Chul, *Polytechnic University*; Kim, Seung P., *InterDigital Telecommunication*

MPA14 VLSI I - Poster

Professor Igor Filanovsky, *University of Alberta*

MPA14-1 **A Pulse-Triggered TSPC Flip-Flop for High-Speed Low-Power VLSI Design Applications**
Yang, Po-Hui and Wang, Jinn-Shyan, *Chung Cheng University*

MPA14-2 **A Programmable Interpolation Filter for Digital Communications Applications**
Kuo, Tzu-Chieh, *UCLA/Pairgain Technologies, Inc.*
Wilson, Alan N, *UCLA*

MPA14-3 **Validation of an Accurate and Simple Delay Model, and its Application to Voltage Scaling**
Aas, Einar J. and Njoelstad, Tormod, *Norwegian Univ. of Science and Technology (NTNU)*

MPA14-4 **A compact 31-input programmable majority gate based on Capacitive Threshold Logic**
Gurkaynak, Frank K., *Swiss Federal Institute of Technology*

MPA14-5 **A Scalable Shared Buffer ATM Switch Embedded SPRAMS**
Jeong, Gabjoong, *Yonsei University*

MPA14-6 **Optimum Design for a Two-Stage CMOS I/O ESD Protection Circuit**
Li, Tong, *University of Illinois at Urbana-Champaign*

MPA14-7 **Low-Swing Charge Recycle bus drivers**
Karlsson, Magnus; Vesterbacka, Mark, and Wanhammar, Lars, *Linköping University, Sweden*

MPA14-8 **A Pipelined Architecture of Fast Modular Multiplication for RSA Cryptography**
Shieh, Ming-Der, *National yunlin institute of Technolgy*

MPA14-9 **Multiple-valued Logic Voltage-mode circuits based on true single-phrase clocked logic**
Thanailakis, A.; Karafyllidis, I.; Thoidis, I., and Soudris, D., *VLSI Design of Electricaland Electronic Materials*

MPA14-10 **Current Sensing Differential Logic (CSDL) for Low-Power and High-Speed Systems**
Park, Joonbae; Kim, Wonchan, and Lee, Jeongho, *Seoul National University*

MPA14-11 **A Divide-by-4 Circuit Implemented in Low Voltage, High Speed Silicon Bipolar Design Topology**
Mokhtari, Mehran; Tenhunen, Hannu, and Schuppener, Gerd, *Royal Institute of Technology*

MPA14-12 **Automated Implementation of RNS to Binary Converters**
Henkelmann, Heiko, *University of Bremen*
Drolshagen, Ansgar, *University of Bremen*

MPA14-13 **A Programmable Image Processing Chip**

LeRiguer, Eric, *The Queen's University of Belfast*

MPA14-14 **An Implementation Technique of Dynamic CMOS Circuit Applicable to Asynchronous/Synchronous Logic**
Yoshizawa, Hiroyasu; Taniguchi, Kenji, and Nakashi, Kenichi, *Grad. School of ISEE, Kyushu University*

MPA14-15 **Design Issues in Cross-Coupled Inerter Pair Sense Amplifier**
Heald, Raymond, *Sun Microelectronics*
Hajimiri, Ali, *Stanford University*

MPA14-16 **A Novel Low-Power Building Block Cell for Adders**
Shams, Ahmed, *University of Southwestern LA*

MPA14-17 **Modified Half Rail Differential Logic For Reduced Internal Logic Swing**
Won, Jae-Hee and Choi, Kiyoung, *Seoul National University*

MPA14-18 **A Reconfigurable Integrated Circuit for High Performance Computer Arithmetic**
Quigley, Steven F. and Miller, Neil L., *University of Birmingham*

MPA14-19 **Data-Driven Self-Timed Differential Cascode Voltage Switch Logic**
Mathew, Sanu and Sridhar, Ramalingam, *The State University of New York at Buffalo*

MPA14-20 **A Novel Asynchronous Control Unit and the Application to a Pipelined Multiplier**
Liao, Xiaofeng, *University of Electronic Science and Technology*
Chiang, Jen-Shiun, *Tamkang University*

MPA14-21 **The Design and Implementation of an Asynchronous Radix-2 Non-Restoring 32-B/32-B Ring Divider**
Liao, Xiaofeng, *University of Electronic Science and Technology*
Chaing, Jen-Shiun, Tamkang University

MPA14-22 **A Novel Digital-Serial Systolic Array for Modular Multiplication**
Wang, Chin-Liang and Guo, Jyh-Huei, *National Tsing Hua Univ.*

MPA14-23 **Dual Signal Configuration for Low Power Voltage High Performance Pipline Multiplier**
Ng, A.E., *University of Glasgow*
Wu, Angus, *City Universtiy of Hong Kong*

MPA14-24 **Circuit Design for Current-Sensing Completion Dedication**
Lampinen, Harri, *Tampere University of Technology*

MPA15 Analog and Mixed-Signal VLSI Design – Poster

Professor Sherif Embabi, *Texas A&M University*

MPA15-1 **Design of a Delta Sigma Modulated Switching Power Supply**
Dunlap, Steven and Fiez, Terri S., *Washington State University*

MPA15-2 **Theory and Implementation of a Gaussian Decay Low-pass Filter**
Pu, Chiang-Jung and Harris, John G., *University of Florida*

MPA15-3 **Circuit Tolerances and Word Lengths in Overlap Resolution**
Saed, Aryan, *University of Windsor*

MPA15-4 **A Design-For-Testability Technique for Detecting Delay Faults in Logic Circuits**
Raahemifa, K.,*University of Windsor*
,Ahimadi, M. *University of Windsor*

MPA15-5 **About the demodulation of pwm signals with applications to audio amplifiers**
Streitenberger, Martin, *Otto-von-Guericke-Universitae t*
Mathis, Wolfgang, *Otto-von-Guericke-Universitae t Magdeburg*
Bresch, Helmut, *University of Magdeburg*

MPA15-6 **A BiCMOS Current-Mode Analogue Add-Compare-**

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Select Unit For Viterbi Decoders
Demosthenous, Andreas and Taylor, John, *University College London*

MPA15-7 **Deterministic Phase Jitter in Multi-Phase CMOS Ring Oscillators Due to Transistor Mismatches**
Chen, Yiqin; Lee, Edward K.; Geiger, Randall, and Koneru, Satyaki, *Iowa State University*

MPA15-8 **A winner-take-all network for large scale analogue vector quantizers**
Demosthenous, Andreas and Taylor, John, *University College London*

MPA15-9 **A Simple Low-Voltage All MOS Linear-dB AGC/Multiplier Circuit**
Ismail, Mohammed and Brannen, Robert A., *The Ohio State University*

MPA15-10 **Noise Analysis of an Oscillator With an Mth-Order Filter and Comparator-Type Nonlinearity**
Suyama, Ken and Des, Alezsande, *Columbia University*
Toth, Laszlo, Lucent Technologies, Inc.

MPA15-11 **A 4 GHz Differential Transimpedance Amplifier Channel for a Pulsed Time-of-Flight Laser Radar**
Ruotsalainen, Tarmo; Pennala, Riku; Kostamovaara, Juha, and Palojärvi, Pasi, *University of Oulu*

MPA15-12 **Design of Low Jitter PLL for Clock Generator with Supply Noise Insensitive VCO**
Lee, Chang-Hyeon; Cornish, Jack, and McClellan, Kelly, *SMC*
Choma, John, *USC*

MPA15-13 **Novel Palmo Technoques for Electronically Programmable Mixed Signal Arrays**
Papathanasiou, Kostandinos and Hamilton, Alister, *University of Edinburgh*

MPA15-14 **A Constant Input Transconductance and Rail-to-Rail Input/Output Swing SiC CMOS OPAMP**
Chen, Jian-Song, *Purdue University*; Kornegay, Kevin T., *Massachusetts Institute of Technology*

MPA15-15 **CMOS analog multipliers based on a class-B squaring circuit**
Pellegrini, Aurelio; Baccarani, Giorgio, and Gnudi, Antonio, *University of Bologna*

MPA15-16 **A Baseband Pulse Shaping Filter for Gaussian Minimum Shift Keying**
Pavan, Shanthi, *Texas Instruments*
Krishnapura, Nagendra, *Columbia University*

MPA15-17 **A 10-bit 130-MSample/s CMOS Sample-and-Hold Circuit**
Halonen, Kari A. and Waltari, Mikko E., *Helsinki University of Technology*

MPA15-18 **A Novel Technique for Noise Reduction in CMOS Subsamplers**
Halonen, Kari A.; Parssinen, Aarno T.; Lindfors, Saska J.; Ryynanen, Jussi H., *Helsinki University of Technology*

MPA15-19 **A Novel Self-Error Correction Pulse Width Modulator for a Class D Amplifier for Hearing Instruments**
Tan, Meng Tong;Tong, Yit Chow; Chang, Joseph S.., and Cheng, ZhiHong, *Nanyang Technological University*

MPA15-20 **An Approach to the Design of Low-voltage SC Filters**
Palumbo, G.; Filoramo, P.; Palmisano, S., and Giustolisi, Gianluca, *Universita di Catania*

MPA15-21 **Design of a Micropower Signal Conditioning Circuit for a Piezoresistive Acceleration Sensor**
Baru, Marcelo D.; Silveira, Fernando; Arnaud, Alfredo, and Picun, Gonzalo F., *Universidad de la Republica*

MPA15-22 **A BiCMOS Current-MOde Track-and-Hold**
Oliaei, Omid, *Ecole Nationale Superieure des Telecommunications*

MPA15-23 **Analog Implementation of Ratio Spectrum Computation**
Lim, Shao-Jen and Harris, John, *University of Florida*

MPA15-24 **Analysis and Tow Proposed Design Methodologies for** Optimizing Power Efficiency of a Class D Amplifier Output Stage
Tan, Meng Tong and Chang, Joseph S., *Nanyang Technological University*

TUESDAY – June 2, 1998 (Morning)

TAA1 Filter Banks and Wavelets - Lecture

Professor Yih-Fang Huang,
University of Notre Dame

TAA1-1 **A Filter Bank - Mother Wavelet Relationship in the Context of the Discrete Time Wavelet Transform**
Hanna, Magdy T. and Mansoori, Sana A., *Cairo University / Fayoum Branch*

TAA1-2 **Design of Signal-Adapted Linear Phase Paraunitary Filter Banks**
Takeuchi, Tomoaki; Ikehara, Masaaki, and Nagai,Takayuki, *Keio University*

TAA1-3 **Mutual Relations Between Arithmetic and Haar Functions**
Falkowski, Bogdan, *Nanyang Technological University*

TAA1-4 **A New Approach to the Design of QMF Banks**
Kao, Min-Chi and Chen, Sau-Gee, *National Chiao Tung University*

TAA1-5 **Rationalizing the Coefficients of Popular Biorthogonal Wavlet Filters**
Tay, David B., *Nanyang Technological University*,

TAA1-6 **Analytical design for a famiy of cosine modulated filter banks**
Roche, Christian and Siohan, Pierre, *CNET/DSM - France Telecom Group*

TAA1-7 **Results on Optimal Biorthogonal Subband Coders**
Kirac, Ahmet and Vaidyanathan, P. P., *California Institute of Technology*

TAA1-8 **An Efficient Algorithm To Design Perfect Reconstruction Regular Quadrature Mirror Filters Using Weighted Lp Error Criteria**
Lim, Yong-Ching and Goh, Chee-Kiang, *National University of Singapore*

TAA2 Model., Anal. & Des. of Switching Mode Converters - Special

Professor Henry Chung, *University of Hong Kong*

TAA2-1 **Design and Analysis of Quasi-Switched-Capacitor Step-Up DC/DC Converters**
Chung, Henry, *City University of Hong Kong*

TAA2-2 **High Efficient PWM Zero-Voltage-Transition DC-DC Converter**
Ioinovici, A. and Berovici, E., *Holon Institute for Technological Education*

TUESDAY – June 2, 1998 (Morning)

TAA2-3 **Bidirectional Buck-Boost Converrter with Variable Output Voltage**
Czarkowski, Dariusz, *Polytechnic University*
Krishnamachari, Bhaskar, *Albert Nerken School of Engineering*

TAA2-4 **Sliding Mode Control of a Buck Converter for AC Signal Generation**
Guinjoan, Francesc, *UPC.ModulC4.Campus Nord C/Gran Capitan s/n*
Ramos, Rafael, *EUPVG UPC.C/Victor Balaguer s/n*
Fossas, Enric, *UPC.Modul C3. Campus Nord. C/Gran Capitan s/n*
Biel, Domingo, *EUPVG UPC.C/Victor Balaguer s/n*

TAA2-5 **Novel PWM Control Method of Switched Capacitor DC-D Converter**
Suetsugu, Tadashi, *Fukuoka University*

TAA2-6 **A Sharp True Worst-Case Estimation in Circuit Tolerance & Sensitivity Analysis**
Femia, N.; Egiziano, L.; Spagnuolo, G., and Vocca, G., *Universita di Salerno*

TAA2-7 **Analytical Solution to harmonic Characteristics of PWM H-Bridge Converters with Dead Time**
Wu, C.; Chung, Henry, and Lau, W.H., *City University of Hong Kong*

TAA2-8 **General Purpose Sliding-Mode Controller for Bidirectional Switching Converters**
Romero, A. and Martinez-Salam, L., *Universitat Rovira j Virgili*
Pallas, O. and Poveda, A., *Universitat Politecnica de Catalunya*

TAA2-9 **A 1.5 kW Two Transistors Forward Converter Using a Non-Dissipative Snubber**
Freitas, Roger Alex de Castros, *Brazil*,

TAA3 Neural Networks I: Algorithms and Computation - Lecture

Professor Robert Newcomb, *University of Maryland*

TAA3-1 **On-line Tracking Abilities of Neural Networks with Graded Responses**
Kuh, Anthony, *University of Hawaii*

TAA3-2 **A New Class of Apex-Like PCA Algorithms**
Fiori, Simone; Piazza, Francesco, and Uncini, *Aurelio, University of Ancona*

TAA3-3 **MultiResolution Neural Networks For Recursive Signal Decomposition**
Wong, K. W. and Kan, Kai Chiu, *City University of Hong Kong*

TAA3-4 **Characteristics of Gradient Descent Learning with Neuronal Gain Control**
Kurokawa, Hiroaki, *Keio University*
Ho, Chun-ying, *City University of Hong Kong*

TAA3-5 **Training of a class of Recurrent Neural Network**
Sbaaban, Khaled, *Assiut University*

TAA3-6 **Dynamic Systems Learning by a Circuit Theoretic Approach**
Campolucci, Paolo, *Univbersita di ancona*

TAA3-7 **Textural Features and Neural Networks for Image Classification**
Fernandez-Maloigne, Christine, *University of Poitiers*

TAA3-8 **Training RBF Networks with the Kalman Filter**
Ciocoiu, Iulian, *Technical University of IASI*

TUESDAY – June 2, 1998 (Morning)

TAA4 Speech and Video Processing - Lecture

Professor Chung-Yu Wu
National Chiao Tung University
Prof. Thanos Stouraitis
University of Patras, Greece

TAA4-1 **Efficient Coding of Linear Predictive Coefficients for Wideband Speech**
Sandler, Mark B. and Magrath, Anthony J., *King's College, University of London*

TAA4-2 **Regressive Linear Prediction with Triplets - An Effective All-Pole Modelling Technique for Speech Processing**
Varho, Susanna and Alku, Paavo, *University of Turku*

TAA4-3 **A Novel Algorithm to Estimate the Line Spectral Frequencies From LPC Coefficients**
Nakhai, Mohammad R. and Marvasti, Farokh A., *King's College, University of London*

TAA4-4 **Wideband Speech Recovery from Bandlimited Speech Using Neural Network**
Yasukawa, Hiroshi, *Nippon Telegraph and Telephone Corporation*

TAA4-5 **An Efficient Method for the Removal of Impulse Noise from Speech and Audio Signals**
Chandra, Charu; Moore, Michael S., and Mitra, Sanjit K., *University of California – Santa Barbara*

TAA4-6 **Finite Wordlength Effects Analysis and Wordlength Optimization of AC-3 Audio Decoder**
Lee, Seokjun and Sung, Wonyong, *Seoul National University*

TAA4-7 **The NLMS Algorithm Using a Quasi-Orthonormal Initialization Scheme for Acoustic Echo Cancellation**
Chen, Heng-Chou and Chen, Oscal T.-C., *National Chung Cheng University*

TAA4-8 **Motion Estimation Using an Efficient Four-Step Search Method**
Wang, Kuan-Tsang and Chen, Oscal T.-C., *National Chung Cheng University*

TAA5 Communiating with Chaos I - Special

Professor Michael Peter Kennedy
University College Dublin

TAA5-1 **Recent Advances in Communicating with Chaos**
Jako, Z.; Kis, G.; Kennedy, M.P., and Kolumban, G., *Technical University of Budapest*

TAA5-2 **Statistical Analysis of Chaotic Communication Schemes**
Schwarz, Wolfgang; Abel, A., and Goetz, M., *Technical University of Dresden*

TAA5-3 **The Performance of Chaos Shift Keying: Synchronization versus Symbolic Backtracking**
Schweizer, J., *EPFL*

TAA5-4 **Integrated Circuit Blocks for a DCSK Chaos Radio**
Delgado-Restitu, Manuel, *Instituto de Microelectronica de Sevilla*
Rodriguez-Vazq, Angel, *Instituto de Microelectronica de Sevilla*
Porra, Veikko, *Helsinki University of Technology*

TAA5-5 **FM-DCSK**
Kennedy, M.P.; Jako, Z.; Kolumban, G., and Kis, G., *Technical University of Budapest*

TAA5-6 **Modulation RF-Carriers by Chaotic Signals**
Dmitriev, A., *Russian Academy of Sciences*

TAA5-7 **Direct sequence and fequency hopping techniques via**

choas
Itoh, M., *Nagasaki*

TAA5-8 **Sequence Synchronization in Choas-Based DS-CDMA Systems**
Rovatti, R.; Setti, G., and Mazzini, G., *University of Bologna*

TAA5-9 **Implementing RF Broadband Chaotic Oscillators: Design Issues and Results**
Silva, Christopher P. and Young, Albert, *The Aerospace Corporation*

TAA7 Nonlinear Networks and Systems - Lecture

Professor K. S. Chao, *Texas Tech University*

TAA7-1 **A Simple bracketing Algorythem for determining transition time instants in pwl circuits**
Premoli, Amedio;and Pastore, Stefano, *DEEI, University of Triesti*

TAA7-2 **Global Asymptotic Stability of A Class of Nonlinear Dynamical Systems**
Xiong, Kaiqi, *North Carolina State University*

TAA7-3 **A Discrete-Time Approach to the Steady State Analysis of Distributed Nonlinear Circuits**
Miró-Sans, Joan; Palà-Schönwäld, Pere, and Bonet-Dalmau, Jordi, *UPC-Department of Signal Theory and Communications*

TAA7-4 **Bifurcation of Switched Nonlinear Dynamical Systems**
Kousaka, Takuji; Kawakami, Hiroshi, and Ueta, Tetsushi, *The University of Tokushima*

TAA7-5 **Chaos generators with piecewise linear trajectory**
Tsubone, Tadashi and Saito, Toshimichi, *Hosei University*
Schwarz, Wolfgang, *Technical University Dresden*

TAA7-6 **Spatiotemporal Pattern from a Simple Hysteresis Network**
Jin'no, Kenya and Tanaka, Mamoru, *Sophia University*

TAA7-7 **Synchronization Phenomena from a Simple Hysteresis Neural Network with Different Time Constants**
Nakaguchi, Toshiya and Jin'no, Kenya, *Sophia University*

TAA7-8 **Effects of the deviation of element values in a ring of three and four coupled van der Pol oscillators**
Endo, Tetsuro and Ookawara, Tsuyoshi, *Meiji University*

TAA8 Amplifiers I - Lecture

Professor Edward Lee, *Iowa State University*

TAA8-1 **A High Frequency CMOS current feedback OPAMP**
Manetakis, Kostas, *Imperial College*; Toumazou, Chris and Papavassiliou, Christos, *Imperial College of Science Technology & Medicine*

TAA8-2 **A 3-V CMOS Wideband Exponential Control Variable-Gain-Amplifier**
Huang, Po-Chiun, Chorng-kuang, Wang, and Chieu, Li-Yu, *National Central University*

TAA8-3 **Systematic Generation of Transconductance Based Variable Gain Amplifier Topologies**
Klumperink, Eric A. M., and Tuijl, Ed J.M., *MESA Research Institute, University of Twente*

TAA8-4 **Low Noise Current-Mode CMOS Transimpedance Amplifier for Giga-bit Optical Communication**
Toumazou, Chris, *Imperial College of Science Technology & Medicine* Park, Sung, *Imperial College*

TAA8-5 **A CMOS Automatic Gain Control for Hearing Aid Devices**
Silva-Martinez, Jose and Salcedo-Suñer, Jorge, *I.N.A.O.E.*

TAA8-6 **CMRR Enhancement Techniques for Current-Mode**

Instrumentation Amplifiers
Koli, Kimmo J. and Halonen, Kari A., *Helsinki University of Technology*

TAA8-7 **An Amplifier Design Methodology Derived from a MOSFET Current-Based Model**
Pinto, Rodrigo Luiz de Oliveira, *Universidade Federal de Santa Catarina;* Cunha, Ana A., *Universidade Federal da Bahia*
Schneider, Marcio C. and Galup-Montoro, Carlos, *Universidade Federal de Santa Catarina*

TAA8-8 **A 3-V CMOS Optical Preamplifier with DC Photocurrent Rejection**
Johns, David A. and Phang, Khoman, *University of Toronto*

TAA9 Logdomain Filters - Lecture

Professor Alison Payne,
Imperial College, London, England

TAA9-1 **A Fully-Programmable Analog Log-Domain Filter Circuit**
Roberts, Gordon and Hematy, Arman, *McGill University / MACS Laboratory*

TAA9-2 **New fully balanced log-domain integrators**
El-Masry, Ezz and Wu, Jie, *DalTech, Dalhousie University*

TAA9-3 **Multiple Feedback Log-domain Filters**
Payne, Alison J. and Drakakis, Emmanuel, *Imperial College*
Toumazou, Chris, *Imperial College of Science Technology & Medicine*

TAA9-4 **Synthesis of Distortion Compensated Log-Domain Filters Using State Space Techniques**
Frey, Doug, *Lehigh University*

TAA9-5 **An Auto-Biased 0.5um CMOS Transconductor for Very High Frequency Applications**
Franca, Jose E.; Garrido, Nuno, and Franca, Jose, *Instituto Superior Tecnico*

TAA9-6 **Noise in high-order log-domain filters**
Punzenberger, Manfred, *Swiss Federal Institute of Technology, Lausanne*

TAA9-7 **Low-Voltage Current-Mode Continuous-Time CMOS IC Filters With Orthogonal w-Q Tuning**
Shana'a, Osama, *Stanford University*
Schaumann, Rolf, *Portland State University*

TAA9-8 **Analysis of noise in translinear filters**
Kouwenhoven, Michiel; Mulder, Jan; Roermund, Arthur H.; van der Woerd, Albert C., and Serdijn, Wouter, *Delft University of Technology*

TAA10 Oversampled Data Converters - Lecture

Professor Raymond Chik

TAA10-1 **Micro-power sigma-delta A/D-converter**
Rapakko, Harri, *University of Oulu*

TAA10-2 **An Area-Efficient Sigma-Delta DAC with semidigital IFIR reconstruction filter**
Byung-Moo, *LG Semicon Co.,Ltd.*; Kim, Soo-Won; Kim, Jae-Wan Kim, and Yoo, Jang-Sik, *Korea University*

TAA10-3 **A 1v CMOS second order sigma-delta modulation**
Salama, C.Andre T. and Ma, Stanley Jen-Chen, *University of Toronto*

TAA10-4 **Mismatch-Shaping DAC for Lowpass and Bandpass Multi-Bit Delta-Sigma Modulators**
Schreier, Richard, *Analog Devices, Inc.*
Shui, Tao, *Oregon State University*

TAA10-5 **Mismatch Cancellation for Double-Sampling Sigma-Delta Modulators**

Snelgrove, Martin and Yu, Li, *Carleton University*

TAA10-6 **Power Optimization of Delta-Sigma Analog-to-Digital Converters Based on Slewing and Partial Settling Considerations**
Naiknaware, Ravindranath and Fiez, Terri S., *Washington State University*

TAA10-7 **Nonuniform to Uniform Decimation for Delta-Sigma Frequency-to-Digital Conversion**
Huff, William and Galton, Ian, *University of California at San Diego (UCSD)*

TAA10-8 **A Single-path Multi-bit DAC for A/D Converters**
Louis, Loai, *McGill University*
Roberts, Gordon, *MACS Laboratory, McGill University*

TAA11 Digital Signal Processing for Hearing Aids - Special Session

Professor Neeraj Magotra
University of New Mexico

TAA11-1 **Recruitment Compensation as a Hearing Aid Signal Processing Strategy**
Allen, Jont, *Bell Labs*

TAA11-2 **Flexible Filterbank Structure for Extensive Signal Manipulations in digital Hearing Aids**
Brennan, Robert, *Unitron Industries, Ltd.*

TAA11-3 **Multiband Compression Hearing Aids: Developing a Performance Metric**
Schmidt, Jon, *Resound*; Rutledge, Janet, *U. of Maryland Medical Center*

TAA11-4 **Multichannel Compression in the Normal Ear: A Signal Processing Algorithm for the Hearing Impaired**
Yund, William, *VA Medical Center*

TAA11-5 **Multichannel Adaptive Noise Reduction in Digital Hearing Aids**
Magotra, Neeraj; Kasthuri, P.; Whitman, R., and Yang, Y., *University of New Mexico*

TAA11-6 **PC Based Auditory Simulation of Hearing Aid**
Shennib, A., *Decibel Instrument*

TAA11-7 **Development of an Open Platform DSP Hearing Aid**
Edwards, Brent and Uvacek, Bob, *Resound Corporation*

TAA12 Analog Circuit Design - Lecture

Professor Chorng-Kuang Wang
National Central University, Taiwan

TAA12-1 **Statistical Behavioral Modeling and Simulation: Concepts and Techniques**
Swidzinski, Jan F. and Styblinski, Maciej, *Texas A&M University*

TAA12-2 **Robust Recursive Inverse Approximation and its Application to Parameter Extraction of Behavioral Models**
Xu, Gonggui and Styblinski, Maciej A., *Texas A&M University*

TAA12-3 **Study of Optimal Importance sampling in Monte Carlo Estimation of Average Quality Index**
Kielbasa, R. and Keramat, Mansour, *Ecole Superieure d'Electricite (SUPELEC)*

TAA12-4 **Worst-Case Analysis of Linear Analog Circuits Using Sensitivity Bands**
Shi, Richard and Tian, Michael, *University of Iowa*

TAA12-5 **Fast time domain noise simulation of sigma-delta converters and periodically switched linear circuits**
Dong, Yikui and Opal, Ajoy, *University of Waterloo*

TAA12-6 **Efficient Utilization of On-chip Inductors in Silicon RF IC Design Using a Novel CAD Tool; the LNA Paradigm**
Papananos, Yannis and Koutsoyannopoulos, Yorgos K., *National Technical University of Athens*

TAA12-7 **Optomega**
Keramat, Mansour, *Ecole Superieure d'Electricite (SUPELEC)*

TAA12-8 **AC Constraint Transformation for Top Down Analog Design**
Malavasi, Enrico, *Cadence Design Systems*
Arsintescu, Bogdan, *Delft University of Technology*

TAA13 Adaptive Signal Processing I - Poster

Professor Paulo S. Diniz
Federal University of Rio de Janiero

TAA13-1 **A New Delayless Subband Adaptive Filter Structure**
Merched, Ricardo; Diniz, Paulo S., and Petraglia, Mariane R, *Federal University of Rio de Janeiro*

TAA13-2 **On the Design of the Target-Signal Filter in Adaptive Beamforming**
Joho, Marcel and Moschytz, George S., *Swiss Federal Institute of Technology*

TAA13-3 **A New Modified Variable Step Size for the LMS Algorithm**
Itoh, Yoshio and Fukui, Yutaka, *Tottori University*
Kobayashi, Masaki, *Ibaraki University*
Okello, James and Nakanishi, Isao, *Tottori University*

TAA13-4 **Adaptive prediction of sample values for digital transducers**
Tröster, Gerhard; Thaler, Markus, and Hölling, Matthias, *Swiss Federal Institute of Technology (ETH)*

TAA13-5 **A DSP-Based Modular Architecture For Noise Cancellation and Speech Recognition**
Nieto-Lluis, Victor; Alvarez-Marqui, Agustin; Gomez-Vilda, Pedro; Rodellar-Biarge, Maria-Victoria; Perez-Castellanos, Maria-Mercedes; Martinez-Olalla, Rafael,*Universidad Politécnica de Madrid*

TAA13-6 **An Efficient Approach to Noise Suppression in Adaptive Filtering Subject to Output Envelope Constraints**
Zheng, Wei Xing, *University of Western Sydney, Nepean*

TAA13-7 **A Feedback ANC System Using Adaptive Lattice Filters**
Yau, Sze Fong and Yeung, Tak Keung, *The Hong Kong University of Science and Technology*

TAA13-8 **Pipelining of 2-Dimensional adaptive filters based on the LDLMS algorithm**
Kiya, Hitoshi, *Tokyo Metropolitan University*; Nishikawa, Kiyoshi and Kimijima, Tadaaki, *Graduate School of Engineering, Tokyo Metro. Univ.*

TAA13-9 **Transform-domain delayed LMS algorithm and architecture**
Wu, An-Yeu, *National Central University*

TAA13-10 **Generalization of Exponentially Weighted RLS Algorithm Using a State-Space Model**
Kim, Beomsup; Lee, Yong H., and Chun, Byungjin, *Korea Advanced Institute of Science and Technology*

TAA13-11 **Adaptive Spectral Estimation Based on an EXP Model**
Tokuda, Keiichi, and Junibakti, Sanubari, *Satyawacana University*

TAA13-12 **LMS/LMF and RLS Volterra System Identification based on Nonlinear Wiener Model**
Chang, Shue-Lee and Ogunfunmi, Tokunbo, *Santa Clara*

University

TAA14 VLSI II - Poster

Dr. Sudhakar Muddu, *Silicon Graphics, Inc.*

TAA14-1 **Synthesis of Critical ASICs with Embedded Fully Concurrent Fault Resilience**
Orailoglu, Alex and Hamilton, Samuel N., *University of California, San Diego*

TAA14-2 **A Low-Power GaAs MESFET Dual-Modulus Prescaler**
Kanan, Riad, *Swiss Federal Institute of Technology (EPFL)*

TAA14-3 **A Noise-Based Random Bit Generator IC for Applications in Cryptography**
Connelly, Joseph A. and Petrie, Craig S., *Georgia Institute of Technology*

TAA14-4 **A Metal-Mask Programmable 2.5V 100MHz 682-Term PLA with 700mV-Swing Output Plane**
Nicol, Chris J. and Singh, Kanwar J., *Lucent Technologies*

TAA14-5 **44Gbit/s 4:1 Multiplexer and 50Gbit/s 2:1 Multiplexer in pseudomorphic AlGaAs/GaAs-Hemt Technology**
Nowotny, Ulrich and Lao, Z., Thiede, A., Lienhart, H., Hornung, J., Kaufel, G., Kohler, K., and Glorer, K. ,*Fraunhofer-Institut Angewandte Festkörperphysik*

TAA14-6 **Floating-Gate CMOS Analog Memory Cell Array**
Harrison, Reid R., *California Institute of Technology*
Hasler, Paul, *Georgia Institute of Technology*
Minch, Bradley A., *Cornell University*

TAA14-7 **The most resistive model for the MOS resistive circuit**
Osa, Juan I.; Carlosena, Alfonso, and Porta, S., *Universidad Publica de Navarra*

TAA14-8 **Novel Input ESD Production Circiut with Substrate-Triggering Techneque in a 0.25-mm Shallow Trench-instalation CMOS Technology**
Wu, C., *City University of Hong Kong*
Su, Yih-Ming, *National Cheng Kung University*
Ker, Ming-Dou, *National Chiao-Tung University*
Chen, Pei-Yin, *National Cheng Kung Univ.*
Sun, Tao, *Oregon State University*

TAA14-9 **Dynamic-Floating-Gate Design for OutPut ESD Protection in a 0.35-um CMOS Cell Library**
Ker, Ming-Dou, *Industrial Technology Research Institute (ITRI)*
Tsao, Y. –F., Wang, Chen-Chia, Yeng, Horng-Ru and Chang, Hun-Hsien, *Taiwan Semiconductor Manufacturing Company*
Wang, Michelle, *University of Southern California*
Chang, Pen-Yiing, *National Tsing-Hua University*

TAA14-10 **Fully Integrated Readout Channel with Amplitude and Time Measurement for AMS Experiment of ISSA**
Castello, R.; Boella, G.; Baschirotto; Andrea, Frattini, G.; Pessina, G., and Rancoita, P.G. *Universita'di Pavia*

TAA14-11 **Optimum SNS to Binary Conversion Algorithm and FPGA Realization**
Pace, P.E.; Ringer, W.P., and Styer, D., *Naval Postgraduate School*

TAA14-12 **Switched-Capacitor Interpolator for Direct-Digital Frequency Synthesizers**
Franca, Jose E. and Santos, Paulo J., *Instituto Superior Tecnico*

TAA15 CAD I - Poster

Professor Douglas J. Fouts

TUESDAY – June 2, 1998 (Morning)

Naval Postgraduate School

TAA15-1 **Maximally Routable Switch Matrices for FPD Design**
Chang, Yao-Wen and Wu, Guang-Min, *National Chiao Tung University*

TAA15-2 **Fault Emulation with Optimizes Assignment of Circuit Nodes to Fault Injectors**
Sedaghat-Maman, Reza, *University of Hanover*

TAA15-3 **State-space Technique for Minimal Realisation of Analogue Circuits and Systems**
Arslan, Tughrul, *Cardiff University of Wales*
Kadim, H.J., *Hull University*

TAA15-4 **Precise-MD: A Software Tool for Resources Constrained**
Hua, Jia; Halverson, Ranette H.; Passos, Nelson L., and Rashid, Obaidur, *Midwestern State University*

TAA15-5 **Redesignability Analysis of Digital Circuits with Incomplete Implementation Information**
Wey, Chin-Long and Khalil, Mohammad A., *Michigan State University*

TAA15-6 **Fuzzy Multiobjective Decision Making On Modeled VLSI Architecture Concepts**
Jeschke, Hartwig, *University of Hannover*

TAA15-7 **parallel coprocessor architectures for molecular dynamics simulation: a case study in design space exploration**
Gerber, Martin, *Federal Institute of Technology (ETH)*

TAA15-8 **Dual Edge Operations in Reduced Ordered Binary Decision Diagrams**
Miller, Michael, *University of Victoria*
Drechsler, Rolf, *Albert-Ludwigs-University*

TAA15-9 **ROBDD as a recursively defined periodic bit-string**
Lee, Seong-Bong, *ETRI*

TAA15-10 **Generation of Quasi-optimal FBDDs through Paired Haar Spectra**
Falkowski, Bogdan, *Nanyang Technological University*; Chang, Chip-Hong, *Nanyang Polytechnic,French Singapore Institute,*

TAA15-11 **Calculation of paired Haar Spectra for Systems of Incompletely Specified Boolean Functions**
Chang, Chip-Hong, *Nanyang Polytechnic,French Singapore Institute*; Falkowski, Bogdan, *Nanyang Technological University*

TAA15-12 **Pseudo-Symmetric Functional Decision Diagrams**
Chrzanowska-Jeske Malgorzata, *Portland State University*

TAA15-13 **A new Lock based State Coding Methodology for Signal Transition Graphs**
Nagalla, Radhakrishna, *University of New South Wales*

TAA15-14 **Multi-input/multi-output Block diagram grammar**
Tsuchida, Kensei; Adachi, Yoshihiro, and Kobayashi, Suguru, *Toyo University*

TAA15-15 **Improved Minimization Methods of Pseudo Kronecker Expressions for Multiple Output Functions**
Drechsler, Rolf and Becker, Bernd, *Albert-Ludwigs-University*
Lindgren, Per, *Lulea University*

TAA15-16 **Computational experience with a primal-dual interior point method for smooth convex placement problems**
Frazer, Mark, *University of Waterloo*
Vannelli, Anthony, *University of Waterloo*
Kennings, Andrew A., *Ryerson Polytechnic University*

TAA15-17 **An Initial Placement Algorithm for 3-D VLSI**
Ohmura, Michiroh, *Hiroshima Institute of Technology*

TAA15-18 **A Novel Methodology for Power Consumption Reduction in a Class of DSP Algorithms**
Merakos, Panagiotis; Masselos, Konstantinos; Goutis, Costas, and Stouraitis, Thanos, *VLSI Design Laboratory*

TUESDAY – June 2, 1998 (Morning)

TAA15-19 **Performance Modeling For System Design: An MPEG A/V Decoder Example**
Hung, Ching-Yu; Hocevar, Dale E., and Sriram, Sundararanjan, *Texas Instruments, Inc.*

TAA15-20 **An Efficient Compiled Simulation System for VLIW Code Verification**
Sung, Wonyong and Ahn, Jae-Woo, *Seoul National University*

TAA15-21 **Graph Transformation for Communication Minimization Using Retiming**
Sha, Edwin; Chen, Fei; Sheliga, Michael, and Yu, Zhihong, *University of Notre Dame*

TAA15-22 **Gate to Channel Shorts in PMOS Devices**
Sayeed, M. Shaheen and Mourad, Samiha, *Santa Clara University*

TAA15-23 **Realistic Delay Modeling in Satisfiability-Based Timing Analysis-Extended Abstract**
Silva, Luis G., *Instituto Superior Tecnico/INESC*
Sakallah, Karem A., *University of Michigan*
Silva, Joao and Silveira, Luis, *Instituto Superior Tecnico/INESC*

TAA15-24 **Enhancing Circuit Preformance Under a Multiple-Phase Cloacking Scheme**
Hsu, Yaun-chung, *IBM*; Sun, Tao, *Oregon State University*; Du, X., *Northern Jion-Tong Univ.*

TUESDAY – June 2, 1998 (Late Morning)

TAB6 Programmable Logic Devices - Lecture
Professor John I. Sewell, *University of Glasgow*

TAB6-1 **A Three-Dimensional FPGA with an Integrated Memory for In-Application Reconfiguration Data**
Chiricescu, Silviu and Vai, Mankuan, *Northeastern University*

TAB6-2 **PARC: Pyramidal Architecture Dedicated to Fast Dynamic Configuration Applications**
Rabel, Claude Eddy, *Ecole Polytechnique de Montreal*

TAB6-3 **VLSI Design of A 1.0 Ghz 0.6-um 8-Bit CLA Using PLA-styled All-M-Transistor Logic**
Tsai, K.-C. and Wang, Chua-Chin, *National Sun Yat-Sen Univ.*

TAB6-4 **Thermal Testing on Programmable Logic Devices**
Boemo, Eduardo and Buedo, *Universidad Autonoma Madrid*

TAB13 DSP Implementations - Poster
Professor Keshab Parhi, *University of Minnesota*

TAB13-1 **16-point high speed (I)FFT for OFDM modulation**
Salsano, Adelio; Salmeri, Marcello; Bertazzoni, Stefano, and Iannuccelli, Manuele, *University of Rome "Tor Vergata"*

TAB13-2 **Use of the Chinese Abacus Method for Digital Arithmetic Functions**
Maloberti, Franco and Chen, Gang, *University of Pavia*

TAB13-3 **Residue to Binary Number Converters for Three Moduli Set**
Swamy, M.N.S. and Wang, Yuke, *Concordia University*

TAB13-4 **A Hybrid Low-latency Serial-Parallel Multiplier**
Bouridane, Ahmed; Ashur, Ahmed; Al-Besher, Badr, and Crookes, Danny, *The Queen's University of Belfast*

TAB13-5 **Efficient prime factor decomposition algorithm and address generation techniques for the computation of discrete cosine transform**
Lun, Pak-Kong and Siu, Wan-Chi, *Hong Kong Polytechnic University*; Chau, Lap-Pui, *Nanyang Technological University*

TUESDAY – June 2, 1998 (Morning)

TAB13-6 **A CORDIC Algorithm with Fast Rotation Prediction and Small Iteration Number**
Lin, Chun-Fu, *Vanguard International Semiconductor Corp*.
Chen, Sau-Gee, *National Chiao Tung University*

TAB13-7 **Efficient Algorithms for Binary Logarithmic Conversion and Addition**
Wey, Chin-Long and Wan, Yi, *Michigan State University*

TAB13-8 **High Level Performance Estimation for a Primitive Operator Filter FPGA**
Eskikurt, Halil, *Ibrahim School of Engineering*,
Arslan,Tughrul, *Cardiff University of Wales*

TAB13-9 **Direct Digital Frequency Synthesis Using a Modified CORDIC**
Daneshrad, Babak and Grayver, Eugene, *UCLA*

TAB13-10 **High-Speed Cordic Based Parallel Weight Extraction For QRD-RLS Adaptive Filtering**
Parhi, Keshab K. and Ma, Jun, *University of Minnesota*
Deprettere, Ed F., *Delft University of Technology*

TAB13-11 **Design and Application of Efficient Optimum Power Estimator Based on Wiener Model for Complex-Valued Signals**
Hartimo, Iiro O.; Tanskanen, Jarno, and Huang, Aiping, *Helsinki University of Technology*

TAB13-12 **An Implementation of a Normalized ARMA Lattice Filter with a CORDIC Algorithm**
Kitajima, Hideo; Shiraishi, Shin-ichi, and Haseyama, Miki, *Hokkaido University*

TAB14 Circuits and Power Systems II - Poster

Professor Krishnaiyan Thulasiraman
University of Oklahoma

TAB14-1 **A Class of Systems with Symmetric Impulse Response**
Vucic, Mladen and Babic, Hrvoje, *Faculty of Electrical Engineering and Computing, Croatia*

TAB14-2 **The Formulation and Implementation of an Analog/Digital Control System for a 100KW DC-to-DC Buck Chopper**
Mak, Chi, *Poer Paragon Inc.*; Ashton, Robert and Ciezki, John G., *Naval Postgraduate School*

TAB14-3 **Synchronization of Subthreshold-CMOS Chaotic Oscillators**
Harris, John, *University of Florida*

TAB14-4 **New Mode-Domain Representation of Transmission Line - Clarke Transformation Analysis**
Pissolato, José and Tavares, Maria Cristina, *State University of Campinas*; Portela, Carlos, *Federal University of Rio de Janeiro*

TAB14-5 **New Mode-Domain Representation of Transmission Line for Power Systems Studies**
Pissolato, José and Tavares, Maria Cristina, *State University of Campinas*; Portela, Carlos, *Federal University of Rio de Janeiro*

TAB14-6 **Optimal Power Flow in Distribution Networks By Newton's Optimization Methods**
Pimentel, Max C. and Medeiros, Manoel F., *Universidade Federal do Rio Grande do Norte*

TUESDAY – June 2, 1998 (Afternoon)

TAB14-7 **Placement of variable Impedance Devices for Enhancement of Small Signal Stability in Power Systems**
Sanchez, E.; Begovich, O., and Messina, A.R., *Cinvestav, IPN*

TAB14-8 **PLD Implementation of Control Algorithms: Design and Validation**
Lazzaroni, M.; Carmeli, S., and Monti, Antonello, *Dipartmento di Elettrotecnica*

TAB14-9 **Time-Domain Analysis for Reflection Characteristics of tapered and Stepped Nonuniform Transmission Lines**
Murakami, Kazuhito and Ishii, Junya, *Kinki University*

TAB14-10 **A Unified Method for the Small-Signal Modelling of Multi-Resonant and Quasi-Resonant Converters**
Kasnsara, M.; Ward, E.S., and Szabo, Adrian, *The Nottingham Trent University*

TAB14-11 **The application of feedback linearization techniques to the stabilization of DC-to-DC converters with constant power loads**
Ciezki, John, G. and Ashton, Robert, *Naval Postgraduate School*

TAB14-12 **Highly Efficient CMOS Class E Power Amplifier for Wireless Communications**
Tu, Steve Hung-Lung, *Imperial College of Science, Technology & Medicine*

TUESDAY – June 1, 1998 (Afternoon)

TPA1 Adaptive Signal Processing II - Lecture

Professor M.N.S. Swamy
Concordia University, Montreal

TPA1-1 **A New Adaptive Algorithm for Reducing the Hardware Complexity**
Lee, Haeng Woo, *ETRI*

TPA1-2 **A New Approach to Least-Squares Adaptive Filtering**
Kocal, Osman H., *Istanbul Technical University*

TPA1-3 **Regressor Based Adaptive Infinite Impluse Response Filtering**
Arikan, Orhan, *Bilkent University*

TPA1-4 **Simplified Realization of Cascaded Adaptive Notch Filters Using Complex Coefficients**
Nishimura, Shotaro, *Shimane University*; Jiang, Hsin-Chin, *Institute of Electronics, National Chiao-Tung University*

TPA2 Coding of Arbitrarily-Shaped Objects – Special Session

Professor Weiping Li, *Lehigh University*
Dr. Joern Ostermann, *AT&T Laboratories*

TPA2-1 **Coding of Arbitrarily Shaped Objects with Binary and Greyscale Alpha-Maps: What Can MPEG-4 Do for You?**
Ostermann, Joern, *AT&T Labs - Research*
Schmidt, Jon, *Resound*

TPA2-2 **Predictive Shape Coding Using Generic Polygon Approximation**
Kim, Jong-il and Evans, B.L., *University of Texas at Austin*

TPA2-3 **Shape Adaptive Wavelet Coding**
Li, S., *Sarnoff Corporation*; Sun, Tao, *Oregon State University*
Wu, C., *City University of Hong Kong*

TPA2-4 **Joint Shape and Texture Rate Control for MPEG-4 Encoders**
Sun, Tao, *Oregon State University*; Vetro, A., *Mitsubishi Electric*
Wang, Yao, *Polytechnic University*

TPA2-5 **Rate-Distortion Optimal Boundary Encoding Using an Area Distortion Measure**
Katsaggelos, A.K.; Melnikov, G., and Karunaratne, P., *Northwestern University*; Schuster, G., *3COM*

TPA3 Neural Networks II: Implementation Issues - Lecture

Professor G. Cauwenberghs
John Hopkins University

TPA3-1 **Continuous-Time Feedback in Floating-Gate MOS Circuits**
Minch, Bradley A., *Cornell University*
Diorio, Chris, *University of Washington*
Hasler, Paul E., *Georgia Institute of Technology*

TPA3-2 **An analog neural network circuit with simultaneous perturbation learning rule**
Maeda, Yutaka and Kanata, Yakichi, *Kansai University*

TPA3-3 **A self-organizing map with resistive fuse**
Katayama, Kousuke; Saito, Toshimichi, and Kawahara, Shingo, *Hosei University*

TPA3-4 **Accuracy vs. Precision in General purpose Neural Digital VLSI Architectures**
Alippi, Cesare and Briozzo, Luciano, *CNR-CESTIA*

TPA4 Image and Video Porcessing II – Lecture

Professor Chung-Lin Huang
National Tsing Hua University
Professor Mohammed Ismail, *Ohio State University*

TPA4-1 **A Fully Parallel Analog Median Filter**
Sanchez-Sinenci, Edgar, *Texas A&M University*
Lopez, Antonio, *Universidad Publica de Navarra*
Diaz-Sanchez, Alejandro, *New Mexico State University*
Ramirez-Angulo, Jaime, *New Mexico State University*

TPA4-2 **VLSI Implementation of Decoder for decompressing fractal-based compressed image**
Kim, Kyung-Hoon; Hong, Chang-Yu, and Kim, Leesup, *Korea Advanced Institute of Science and Technology*

TPA4-3 **Fast Integrated Algorithm and Implementations for the Interpolation and Color Correction of CCD-Sensed Colored Signals**
Chen, Sau-Gee, *National Chiao Tung University*

TPA4-4 **Genetic Algorithms for Active Contour Optimization**
MacEachern, Leonard, *University of Waterloo*

TPA5 Signal Processing for Communications II – Lecture

Professor R. Clark Robertson
Naval Postgraduate School

TPA5-1 **A new processor architecture dedicated to digital modem applications**
Monteiro, Fabrice; Philip, Serge; Dandache, Abbas, and Lepley, Bernard, *University of Metz*

TPA5-2 **A GSM Modulator Using a Delta-Sigma Frequency**

Discriminator Based Synthesizer
Bax, Walt T. and Copeland, Miles A., *Carleton University*

TPA5-3 **Error resilient transmission of H.263 coded video over wireless networks**
Ben Letaief, Khaled; Lu, Jianhua, and Liou, Ming L., *The Hong Kong University of Science & Technology*

TPA5-4 **Discrete fractional hilbert transform**
Yeh, Man-hung and Pei, Soo-chang, *National Taiwan University*

TPA6 Circuits and Systems for Communication Networks I - Lecture

Professor Magdi Bayoumi
University of Southwestern Louisiana

TPA6-1 **A Low-Power VLSI Design Methodology for High Bit-Rate Data Communications over UTP Channel**
Shanbhag, Naresh and Goel, Manish, *University of Illinois at Urbana-Champaign*

TPA6-2 **VLSI Design of an ATM Switch with Automatic Fault Detection**
Tsui, Chi-ying and Kwan, Louis C. Y., *Hong Kong University of Science and Technology*

TPA6-3 **Implementation of ATM OAM Functions for the Integrated Service Access Network**
Lee, Sang-Ho, *Electronics and Telecommunication Research Inst.*

TPA6-4 **A Signaling Protocol Architecture for an ATM Mobile Simulator**
Yoo, Jea-Hoon and Yoo, Jeang-Ju, *ETRI(Electronics and Telecommunications Research I*

TPA7 Analog VLSI - Lecture

Professor Yoji Kajitani
Tokyo Institute of Technology

TPA7-1 **Mutual synchronization in 4 coupled oscillators with different natural frequencies**
Sasase, Iwao, *Keio University*
Mori, Shinsaku, *Nippon Institute of Technology*
Moro, Seiichiro, *Keio University*

TPA7-2 **Short-Period Oscillations from a Sigma-Delta Modulator**
Davies, Anthony C., *King's College London*

TPA7-3 **Spatiotemporal Dynamics of a Stochastic VLSI Array**
Neff, Joseph D. and DeWeerth, Stephen P., *Georgia Institute of Technology*

TPA7-4 **IC Implementation of a Current-Mode Chaotic Neuron**
Suyama, Ken; Horio, Yoshihiko, and Herrera, Ruben, *Columbia University*

TPA9 Communicating with Chaos II - Special

Professor Michael Peter Kennedy
University College Dublin

TPA9-1 **Communicating via Chaos Synchronization Generated by Noninvertible Maps**
Mira, Christisn ,Millerioux, G., *INSA Toulouse*

TPA9-2 **From Chaotic Maps to Encription Schemes**
Parlitz, U., *Goettingen*; Kocarev, L. and Stojanovski, T., *RMIT*
Jakimoski, G., *Sts. Cyril and Methodius*

TPA9-3 **Chaotic Versus Classical Stream Ciphers--A**

Comparative Study
Vandewalle, J., *KU Leuven*; Kelber, K.; Dachselt, F., and Schwarz, W., *Technical University of Dresden*

TPA9-4 **Some tools for Attcking Secure Communication Systems Emplying Chaotic Carriers**
Ogorzalek, M., *AGH*; Dedieu, H., *EPFL*

TPA10 Circuit Simulation - Lecture

Professor Michel Nakhla
Carleton University, Canada

TPA10-1 **Application of the Variable Dimension Newton Method to LArge Scale Circuits**
Ng, Shek-Wai, *The Hong Kong Polytechnic*

TPA10-2 **HomSPICE: Simulator with Homotopy Algorithms for Finding DC and Steady State Solutions of Nonlinear Circuits**
Trajkovic, Ljiljana; Fung, Eula, and Sanders, Seth, *Univ. of Calif.*

TPA10-3 **Convergence Conditions of Waveform Relaxation Methods for Circuit Simulation**
Wing, Omar, *Chinese University of Hong Kong*
Jiang, Yao-lin, *Xian Jiao Tong University*

TPA10-4 **A time-frequency algorithm for the simulation of the initial transient response of oszillators**
Laur, Rainer A.; Brachtendorf, H. G.; Welsch, G., *University of Bremen*

TPA11 Robotics - Lecture

Professor David C. Jenn
Naval Postgraduate School
Professor Teodiano F. Bastos
Universidade Federal do Espirito Santo

TPA11-1 **Wireless Power Transfer (WPT) for Micro-Remotely Piloted Vehicle (MRPV)**
Vitale, Robert L. and Jenn, David C., *Naval Postgraduate School*

TPA11-2 **Sliding mode control for elastic multi-link manipulators based on the dynamic compensation method.**
Utkin, Victor, *Institute of control ciences*

TPA11-3 **New Broadband 100-MBPS System Using Broadband Pin-Board Switch and High-Presision Pin-Handling Technology**
Yoshizawa, Takashi; Inagaki, Shuichiro, and Kobayashi, Keiichi, *NTT Opto-Electronics Laboratories*

TPA11-4 **An Agent-Based Structure For Mobile Robots Using Vision And Ultrasonic Sensors**
Bastos, Teodiano F. and Sarcinelli-Filho, Mario, *Federal University of Espirito Santo*

TPA12 Feedback Systems and Stability - Lecture

Professor Bell A. Shenoi, *Wright State University*

TPA12-1 **A General Operating-Point Instability Test Based on Feedback Analysis**
Fox, Robert, *University of Florida*

TPA12-2 **A 3.3V All Digital Phase Locked Loop with Small DCO Hardware and Fast Phase Lock**
Chaing, Jen-Shiun, *Tamkang University*
Chen, Pei-Yin, *National Cheng Kung Univ.*

TPA12-3 **A Novel Algorithm that Finds Multiple Operating Points of Nonlinear Circuits Automatically**

Goldgeisser, Leonid B. and Green, Michael, *Univ. of California, Irvine*

TPA12-4 **An Extension of the Classical Feedback Theory**
Neag, Marius, *University of Limerick*

TPA13 Multimedia Processing - Poster

Professor Che-Ho Wei
National Chiao Tung University, Taiwan
Professor Yeong Ho Ha
Kyungpook National University, Korea

TPA13-1 **An LPC Cepstrum Processor for Speech Recognition**
Kim, SooWon; Kim, YoungWoo; Hwang, Inchul, and Kim, SungNam, *Korea University*

TPA13-2 **A Visual Model for Subband Image Coding**
Chan, Shing-chow; Fong, W. C., and Ho, K. L., *University of Hong Kong*

TPA13-3 **A fast and accurate scoreboard algorithm for estimating stationary backgrounds in an image sequence**
Yung, H. C. Nelson and Lai, Hon Seng, *University of Hong Kong*

TPA13-4 **Novel Subimage Error Concealment Techniques Suitable for the ATM Environment**
Sharaf, Atif I.; Marvasti, Farokh A., and Hasan, Moh'd A., *King's College University of London*

TPA13-5 **Wipe Scene Change Detector for Segmenting Uncompressed Video Sequences**
Alattar, Adnan, *King Fahd University of Petroleum & Minerals*

TPA13-6 **Hierarchical Scene Change Detection in an MPEG-2 Compressed Video Sequence**
Kim, Jae-Gon, *ETRI*

TPA13-7 **A Robust Linear Prediction Method for Noisy Speech**
Suzuki, Jouji; Shimamura, Tetsuya, and Kunieda, Nobuyuki, *Saitama University*

TPA13-8 **Object tracking hypermedia links creation in MPEG-2 digital video sequences**
Favalli, Lorenzo; Mecocci, O.,Moschetti, F., *University di Pavia*

TPA13-9 **Syntax Based Error Concealment**
Papadakis, Vasilios; Lynch, William, and Le-Ngoc, Tho, *Concordia University*

TPA13-10 **Digital Restoration of painting cracks**
Giakoumis, Ioannis and Pitas, Ioannis, *Aristotle Univ. of Thessaloniki*

TPA14 Oversampled and Sigma-Delta Techniques I - Poster

Professor Teri Fiez, *Washington State University*

TPA14-1 **Harmonic Distortions in Switched-Current Sigma-Delta Modulators due to Clock Feedthrough**
Martins, Jorge and Dias, Victor F., *Instituto Superior Técnico /INESC*

TPA14-2 **Analysis of the non-uniform samplings in SD-modulated signals**
Lee, Eel-wan, *Seoul National University*

TPA14-3 **New analytical model of interpolation waveforms in time-averaging interpolative digital to analogue converters**
Moniri, Mansour, *Staffordshire University*

TPA14-4 **Encoding Hidden Data Channels in Sigma Delta Bitstreams**
Sandler, Mark B. and Magrath, Anthony J., *King's College,*

London University

TPA14-5 **An Architecture of Delta-Sigma A-to-D Converters using a Voltage Controlled Oscillator as a Multi-bit Quantizer**
Sakimura, Noboru; Morie, Takashi; Iwata, Atsushi, and Nagata, Makoto, *Hiroshima University*

TPA14-6 **Current mode approach to sigma-delta modulators**
Suszynski, Robert and Wawryn, Krzysztof, *Technical University of Koszalin*

TPA14-7 **A Folding ADC Employing a Robust Symmetrical Number System with Gray-Code Properties**
Pace, P.E.; Styer, D., and Akin, I.A, *Naval Postgraduate School*

TPA14-8 **Performance Analysis of Low Oversampling Ratio Sigma-Delta Noise Shapers for RF Applications**
Tenhunen, Hannu and Gothenberg, Andreas, *Royal Institute of Technology*

TPA14-9 **Adaptive Compensation of Analog Circuit Imperfections for Cascaded Delta-Sigma ADCs**
Temes, Gabor C.; Wiesbauer, Andreas, and Sun, Tao, *Oregon State University*

TPA14-10 **A Two-Loop Third-Order Multistage Delta Sigma Frequency to Digital Converter**
Riley, Tom; Filiol, Norm; Plett, Calvin, and Copeland, Miles A., *Carleton University*

TPA14-11 **An Oversampled A/D Converter Using Cascaded Fourth Order Sigma-Delta Modulation and Current Steering Logic**
Miao, Guoqing, *Crosslink Semiconductor, Inc.*; Yang, Y., *University of New Mexico*; Tang, Pushan, *Fudan University,*

TPA14-12 **A 12-bit,100ns/b,1.9mW CMOS Switched-Current Cylic A/D Converter**
Wey, Chin-Long and Wang, Jin-sheng, *Michigan State University*

TPA15 Sensors and Related Circuits - Poster

Dr. Richard Colbeth, *Varian Imaging Products*
Professor Igor M. Filanovsky
University of Alberta

TPA15-1 **CMOS N-well and Pinched-well Tetra-lateral Position Sensitive Detectors**
Chowdhury, Mohamed F, *LSI Logic Europe*

TPA15-2 **High performance CMOS**
Ruotsalainen, Tarmo J.; Makynen, Anssi J.; Kostamovaara, Juha T., and Rahkonen, Timo E., *University of Oulu*

TPA15-3 **The transistor as thermal sensor without calibration**
Kanoun, Olfa, *Universität der Bundeswehr München*

TPA15-4 **Two Temperature Sensors Realized in BiCMOS Technology**
Filanovsky, Igor, *University of Alberta*

TPA15-5 **A CMOS Integrated Infrared Radiation Detector for Flame Monitoring**
Malcovati, Piero and Maloberti, Franco, *University of Pavia*

TPA15-6 **A Multi-mode X-ray Imager for Medical and Industrial Applications**
Colbeth, Richard,*Varian Imaging Products*

TPA15-7 **Novel Low Power Class-B Output Buffer**
Yu, Pang-Cheng, *National Chiao-Tung University*
Wu, C., *City University of Hong Kong*

TPA15-8 **A novel image sensor with flexible sampling control**
Ohtsuka, Yasuhiro, *University of Tokyo*

WEDNESDAY – June 3, 1998 (Morning)

TPA15-9 **A 128x128 Imaging Array Using Lateral Bipolar Phototransistors in a Standard CMOS Process**
Sandage, Robert and Connelly, Joseph A., *Georgia Institute of Technology*

TPA15-10 **Single Chip CMOS Image Sensors for a Retina Implant System**
Kneip, T.; Schwarz, Markus; Hauschild, R.; Hosticka, B.J.; Huppertz, J.; Mokwa, W., Trieu, H. K., and Kolnsberg, S. *Fraunhofer-Institute of Microelectronics Circuits*

TPA15-11 **An Analog VLSI Velocity Sensor Using the Gradient Method**
Deutschmann, Rainer A., *Walter Schottky Institute*
Koch, Christof, *Caltech*

TPA15-12 **A Single Fourier Series Technique For the Simulation and Analysis of Asynchronous Pulse Width Modulation in Motor Drive Systems**
Guinee, Richard A., Cork Institute of Technology
Lynden, C, *University College Cork*

TUESDAY – June 2, 1998 (Afternoon)

TPB1 **PANEL DISCUSSION I**
Government Funded Research

TPB2 **PANEL DISCUSSION II**
Teaching of Circuits and Systems in the 21st Century

WEDNESDAY – June 3, 1998 (Morning)

WAA1 **Adaptive Signal Processing III - Lecture**
Professor A. Antoniou, *University of Victoria*

WAA1-1 **DOA Estimation of Speech Source with Microphone Arrays**
Jian, Ming and Kot, Alex C., *Nanyang Technological University*

WAA1-2 **Two New Model Order Selection Approaches for ARMA System Modeling Using The Two Dimensional Frequency Domain Least Square Algorithm**
Mikhael, Wasfy B. and Zhang, Qingwen, *University of Central Florida*; Roman, Jaime R. and Davis, Dennis, *Scientific Studies Corp.*

WAA1-3 **An algorithm-based fault-tolerant method for the 2-D LMS adaptive algorithm**
Jenkins, Kenneth and Schmitz, Christopher D., *University of Illinois*

WAA1-4 **An Adaptive Kalman Filter for the Enhancement of Noisy AR signals**
Doblinger, Gerhard, *Vienna University of Technology*

WAA1-5 **Acceleration of Normalized Adaptive Filtering Data-Teusing Methods using the Tchebyshev and Conjugate Gradient Methods**
Soni, R.A, *University of Illinois at Urbana-Champaign*

WAA1-6 **An Adaptive Beamspace Algorithm for Mobile Satellite Communications Systems using Orthogonal Waveforms and Convolutional Codes**

Terry, John and Williams, Douglas, *Georgia Institute of Technology*

WAA1-7 **On Unbiased Adaptive IIR Filtering Algorithms**
Diniz, P.S., *Prog.de Engenharia Electrica*
Donate, P.D. and Cousseau, J.E., *Universidad Nacional del Sur*

WAA1-8 **A context based lossless compression algorithm for ionogram data**
Deng, Guang; Devlin, John C., and Ye, Hua, *La Trobe University*

WAA2 Steerable Filters and Applications - Special

Professor Vedat Tavsanoglu, *Southbank University*

WAA2-1 **Steerable Pyramid Filters for Image Enhancement Applications**
Schulze, Mark and Castleman, Kenneth, *Perceptive Scientific Instruments, Inc.*; Wu, C., *City University of Hong Kong*

WAA2-2 **Simplified Design of Steerable Pyramid Filters**
Schulze, Mark, *Perceptive Scientific Instruments, Inc.*
Wu, C., *City University of Hong Kong*
Castleman, Kenneth, *Perceptive Scientific Instruments, Inc.*

WAA2-3 **Mutlirate Separable Implementation of Steerable Filter Banks**
Perona, Pietro, *California Institute of Technology*
Manduchi, Roberto, *Apple Computer, Inc.*

WAA2-4 **A common framework for steerable filters, motion estimation, and invariant feature detection**
Teo, Patrick, *Stanford University*; Hel-Or, Yacov, *HP Labs*

WAA2-5 **Handwritten Character Recognition Using Steerable Filters and Neural Networks**
Talleux, Samuel, *Hochschule Bremen*; Tufan, Emir, *University of Istanbul*; Tavsanoglu, Vedat, *South Bank University*

WAA2-6 **Motion Analysis Using Steerable Filters for the Application to Low Quality Images**
Tavsanoglu, Vedat, *South Bank University*
Buhmann, Sitta, *Hochschule Bremen*

WAA2-7 **The SVD approach of steerable filter design**
Sommer, Gerald and Herpers, Rainer, *Christian-Albrechts-Universita et zu Kiel*; Michaelis, Markus, *Plettac Electronics*

WAA3 Networks for Biological Computing & Fuzzy Logic - Lecture

Professor Lex A. Akers
University of Texas at San Antonio

WAA3-1 **An Adaptive Front End for Olfaction**
Stanford, Theron, *California Institute of Technology*
Apsel, Alyssa B., *Johns Hopkins University*
Hasler, Paul, *Georgia Institute of Technology*

WAA3-2 **Adaptation in an aVLSI Model of a Neuron**
Simoni, Mario F. and DeWeerth, Stephen P., *Georgia Institute of Technology*

WAA3-3 **Biologically-Motivated Neural Learning in Situated Systems**
Scutt, Tom, *University of Nottingham*
Damper, R.I., University of Southampton

WAA3-4 **FWNN for Interval Estimation with Interval Learning Algorithm**
Jiao, LiCheng, *Xidian University*

WAA3-5 **Fuzzy-Dsp Coprocessor Core**
Sultan, Labib, *Microfuzz Technologies Inc.*

WAA3-6 **A Current-Mode Piecewise-Linear Function**

Approximation Circuit Based on Fuzzy-Logic
Manaresi, Nicolo', *D.E.I.S. University of Bologna*; Baccarani, Giorgio, *University of Bologna*; Rovatti, Riccardo and Franchi, Eleonora, *D.E.I.S. University of Bologna*

WAA3-7 **Embedded Fuzzy Control on Monolithic DC/DC Converter**
Criscione, Marcello, *SGS-Thomson Microelectronics*

WAA3-8 **A Wavelet-Based Fuzzy Neural Network for Interpolation of Fuzzy If-Then Rules**
Jiao, LiCheng, *Xidian University*

WAA4 Image and Video Processing III - Lecture

Professor Peter Pirsch
University of Hannover, Germany
Dr. James Brailean, *Motorola Inc.*

WAA4-1 **A Comparative Study of DCT and Wavelet Based Coding**
Zhang, Ya-Qin, *Sarnoff Corporation*; Ramchandran, Kannan, *University of Illinois*; Xiong, Zixiang, *University of Hawaii*; Orchard, Michael, *Princeton University*

WAA4-2 **A Two-Level MPEG-Compatible Video Coding Technique Using Wavelets**
Ahmad, I., *Hong Kong University of Science and Technology*
Zhu, Wei-Ping, *Univ. of Elec. Sci. Tech.*
Swamy, M.N.S. and Zan, Jinwen, *Concordia U.*

WAA4-3 **An Adaptive Video Sub-sampling Technique for the Conversion Between High and Low Resolution**
Wong, Hon Wah and Au, Oscar, *The Hong Kong University of Science and Technology*

WAA4-4 **Computation Reduction for Discrete Cosine Transform**
Pao, I-Ming and Sun, M.T., *University of Washington*

WAA4-5 **Embedded Coding of Video Objects for Scalability**
Haridasan, Radhakrishnan and Baras, John S., *Univ. of Maryland*

WAA4-6 **Hybrid DCT/Wavelet I-frame Coding for H.263+**
Kim, Jongwon; Kuo, C.-C. Jay, and Song, Hwangjun, *University of Southern California*

WAA4-7 **Hybrid search algorithm for block motion estimation**
Cheung, Chok-Kwan and Po, Lai-Man, *City Univ. of Hong Kong*

WAA4-8 **Low-power MPEG-2 Encoder Architecture for Digital CMOS Camera**
Meng, Teresa H. and Hsieh, Jeff Y., *Stanford University*

WAA5 Wireless/Mobile Communications - Lecture

Dr. Donald Gingras, *SPAWAR Systems Center*

WAA5-1 **A priority-based random access spread spectrum protocol for integrated voice/data networks**
Lapic, Stephan and Gingras, Donald F., *SPAWAR Systems Center*

WAA5-2 **A Chip-Interleaving DS SS System and Its Performance Under On-Off Wide-Band Jamming**
Gui, Xiang and Ng, Tung Sang, *The University of Hong Kong*

WAA5-3 **A Genetic-Algorithm-Based Multiuser Detector for Multiple-Access Communications**
Lu, Wu-sheng; Wang, Xiao-Feng, and Antoniou, Andreas, *University of Victoria*

WAA5-4 **A New Multiple Access Protocol for Multimedia Wireless Networks**
Gondim, Paulo L. and Salles, Ronaldo, *Instituto Militar de Engenharia - IME Brazil*

WAA5-5 **A DS-CDMA Receiver Using Expotentially Weighted Despreading Waveforms**

Huang, Yuejin and Ng, Tung Sang, *The University of Hong Kong*

WAA5-6 **Blind joint equalization and multiuser detection for DS-CDMA in unknown correlated noise**
Wang, Xiaodong and Poor, H.V., *Princeton University*

WAA5-7 **Improvement in FCMA Perfromance with Limited Interleaving of Signatures**
Ali, Mahmoud A., *Menoufia University*

WAA5-8 **A Multiple-Access Interference Suppression Technique Employing Orthogonal Spreading Sequences and a Novel Decentralized Receiver for B-DS/CDMA Forward Link Systems in Multipath Channel**
Voltz, Peter J., and Shin, Sung-Hyuk, *Polytechnic University*

WAA6 Deep-Submicron Digital Circuit Issues – Lecture

Professor Nicholas Rumin, *McGill University*

WAA6-1 **Performance Criteria for Evaluation the Importance of On-Chip Inductance**
Neves, Jose L. *IBM Microelectronics*; Friedman, Eby G. and Ismail, Yehea I., *University of Rochester*

WAA6-2 **Interconnect Inductance Effects on Delay and Crosstalk for Long On-Chips Nets with Fast Input Slew Rates**
Lee, Mankoo; Hill, Anthony, and Darley, Merrick H., *Texas Instruments Incorporated*

WAA6-3 **Linearized Sub-Optimum Method of Long Wire Interconnections with Uniformed Wire Driver**
Svensson, Christer; Mu, Fenghao and Alvandpour, Atila, *Linkoping University*

WAA6-4 **An Incorrect Transient Coupling Induced Noise Suspectibility for Dynamic Circuits in Deep Submicron CMOS Technology**
Lee, Mankoo and Darley, Merrick H., *Texas Instruments Incorporated*

WAA7 Power Electronics - Lecture

Professor Krishna Shenai
University of Illinois at Chicago

WAA7-1 **An adaptive stepwise quadratic state-space modeling technique for simulation of power electronics circuits**
Hui, S.Y. and Chung, Henry, *City University of Hong Kong*

WAA7-2 **An Efficient Method for Calculating Power Flow Solutions and the Closest Bifurcation Point using Mathematical Programming**
Mori, Hiroyuki and Iizuka, Fumitaka, *Meiji University*

WAA7-3 **Comutation of State Variable Sensitivities of PWM DC/DC Regulators and its Applications**
Chung, Henry; Hui, S.Y., and Wong, Billy K., *City University of Hong Kong*

WAA7-4 **Single-Ended Compact MOS-FET Power Inverter with Automatic Frequency Control for Maximizing RF Output Power In Megasonic Transducer at 3 MHz**
Shinohara, Shigenobu, *Shizuoka University*
Ikeda, hiroaki, *Telecommunications Advancement Org. of Japan*

WAA8 Amplifiers II - Lecture

WEDNESDAY – June 3, 1998 (Morning)

Professor Willy Sansen
Katholic University of Leuven

WAA8-1 **A 1.2 V CMOS op amp with high driving capacity**
Costa, Alfredo and Ferri, Giuseppe, *University of L'Aquila*

WAA8-2 **A 3-V RF CMOS Bandpass Amplifier Using An Active Inductor**
Payne, Alison and Thanachayanon, Apinunt, *Imperial College of Science, Technology & Medicine*

WAA8-3 **A High Performance Low Voltage Op-Amp w/t Constant Rail-to-Rail Input-Gm Control & High Swing Self-Biasing Super Cascade Output Stage**
Asmanis, Georgios S., *University of Southern California*

WAA8-4 **A Low-Voltage CMOS Rail-to-Rail Class-AB Input/Output OpAmp with Slew-Rate and Settling Enhancement**
Lin, Chi-Hung, *The Ohio State University*

WAA8-5 **A 1.6V 80uW rail-to-rail constant-Gm bipolar adaptive biased op-amp input stage**
Cardarilli, G.C. and Ferri, Giuseppe, *University of L'Aquila*

WAA8-6 **A high-drive high-gain CMOS current operational amplifier**
Pennisi, Salvo; Palumbo, G., and Palmisano, S., *Universita di Catania*

WAA8-7 **High speed high accuracy voltage follower**
Su, Yih-Ming, *National Cheng Kung University*
Lidgey, F.J., *Oxford Brookes University*

WAA8-8 **Feedforward Compensation Techniques in the Design of Low Voltage Amplifiers**
Setty, Suma and Toumazou, Chris, *Imperial College of Science Technology & Medicine*

WAA9 Switched-Capacitor Techniques - Lecture

Professor Marcus Helfenstein

WAA9-1 **Switched-Capacitor Decimation Filter for 0.8 um CMOS**
Petraglia, Antonio, *Federal University of Rio de Janeiro/COPPE-UFRJ*; Franca, Jose E., *Instituto Superior Tecnico*; Mitra, Sanjit K., *University of California – Santa Barbara*; Baruqui, Fernando P., *Federal University of Rio de Janeiro/COPPE*

WAA9-2 **A Switched-Capacitor N-Path Decimating Filter**
Franca, Jose E. and Neves, Rui F., *Instituto Superior Tecnico*

WAA9-3 **CMOS Switched-Opamp Based Sample-and-Hold Circuit**
Harjani, Ramesh and Dai, Liang, *University of Minnesota*

WAA9-4 **Companding Switched-Capacitor Filters**
Suyama, Ken; Krishnapura, Nagendra, and Tsividis, Yannis, *Columbia University*; Nagaraj, Krishnaswamy, *Texas Instruments*

WAA9-5 **A New Look at Analogue Computing Using SW Circuits**
Sobhy, Mohamed I., *University of Kent at Canterbury, UK*

WAA9-6 **Clocking scheme for SC circuits**
Steensgaard, Jesper, *Technical Univ of Denmark*

WAA9-7 **Optimization of the Switched-Capacitor Integrator Settling Time**
Chilakapati, Uma and Fiez, Terri S., *Washington State University*

WAA9-8 **Recursive Switched-Capacitor Hilbert Transformer**
Baruqui, Fernando P., *Federal University of Rio de Janeiro/COPPE*; Mitra, Sanjit K., *University of California - Santa Barbara*; Petraglia, Antonio, *Federal University of Rio de Janeiro/COPPE-UFRJ*

WEDNESDAY – June 3, 1998 (Morning)

WAA10 Communicating with Chaos III - Special

Professor Michael Peter Kennedy
University College Dublin

WAA10-1 **Multiplex Communication Schemes Based on Sychronization via Multiplex Pulse-Trains**
Saito, T., *Hosei University*; Schwarz, W., *Technical University of Dresden*; Torikai, H., *Hosei University*

WAA10-2 **Synchronizing Autonomous Chaotic Circuits Using Bandpass Filtered Signals**
Pecora, L.; Mar, D.J.; Carroll, T.L.; Johnson, G.A., and Carroll, T.L., *Naval Research Lab*

WAA10-3 **Master Stability Functions for Synchronized Chaos in Arrays of Oscillators**
Carroll, T.L. and Pecora, L., *Naval Research Lab*

WAA10-4 **Exploiting the Concept of Conditional Transversal Lyapunov Exponents for Study of Synchronization of Chaotic Circuits**
Galias, Z., *AGH*

WAA10-5 **Nonlinear H-Infinity Synchronization: Case Study for a Hyperchaotic System**
Suykens, J. and Vandewalle, J., *KU Leuven*; Chua, L.O, *U.C. Berkeley*

WAA10-6 **Estimation via Synchronization: FM Demodulation Example**
Hahs, D. and Corron, N.J., *Dynetics*

WAA10-7 **Chaotic Synchronization in Coupled Phase Systems**
Shalfeev, Vladimir, *Nizhny Novgorod*

WAA10-8 **Regular and Chaotic Phase Synchronization of Coupled and Discrete Phase-Locked Loops**
Osipov, G., and Kurths, J., *Nizhny Novgorod*

WAA11 VLSI Layout and Timing - Lecture

Professor Majid Sarrafzadeh
Northwestern University

WAA11-1 **On Orientation Metric and Euclidean Steiner Tree Constructions**
Leung, B., *U. of Waterloo*; Wong, C. K., *Chinese University of Hong Kong*; Li, S., *Sarnoff Corporation*

WAA11-2 **Computational Complexity Analysis of Set-Bin-Packing Problem**
Yokomaru, Toshihiko; Izumi, Tomonori; Kajitani, Yoji, and Takahashi, Atsushi, *Tokyo Institute of Technology*

WAA11-3 **A New Approach to Over-the-Cell Channel Routing**
Wong, C. K., *Chinese University of Hong Kong*; Wen, Shui-An and Wang, Ting-Chi, *Chung Yuan Christian University*; Wong, Martin, *University of Texas at Austin*

WAA11-4 **A heuristic algorythem to solve constrained via minimazation for three-layer routing problems**
Takahashi, Kazuhiro and Watanabe, Toshimasa, *Hiroshima University*

WAA11-5 **Utility Function based Hybrid Algorithm for Channel Routing**
Vannelli, Anthony and Etawil, Hussein A., *University of Waterloo*

WAA11-6 **An Age-Controlled Evolutionary Algorithm for Optimization Problems in Physical Layout**
Mlynski, Dieter A. and Huber, Andreas, *Universite at Karlsruhe, Kaiserstr*

WAA11-7 **Timing Optimization of Mixed Static and Domino Logic**
Zhao, Min and Sapatnekar, Sachin S., *University of Minnesota*

WAA11-8 **Optimizing Circuits with Confidence Probability using**

Probabilistic Retiming
Sha, Edwin, *University of Notre Dame*; Passos, Nelson L., *Midwestern State University*; Chantrapornchai, Chantana and Tongsima, Sissades, *University of Notre Dame*

WAA12 Systems and Appls. for Next Generation Internet - Special

Dr. Chun-Sheng Li
IBM T. J. Watson Research Center

WAA12-1 **System Resource Management for Network Servers**
Kandlur, Dilip, *IBM T.J. Watson Research Center*

WAA12-2 **Wireless Systems and Portable Multimedia**
Lin, Horng-dar, *NeoPAradigm Labs, Inc.*

WAA12-3 **Local Loop Access Technology**
Cioffi, John, *Stanford University*

WAA12-4 **Issues for Image/Video Digital Libraries**
Manjunath, B.S., *U.C. Santa Barbara*

WAA12-5 **Transcoding Internet Content for Heterogenous Client Devices**
Mohan, Rakesh, *IBM T.J. Watson Research Center*
Li, S., *Sarnoff Corporation*
Smith, John, *IBM T.J. Watson Research Center*

WAA12-6 **Real-Time Distributed and Parallel Processing for MPEG-4**
He, Y.; Liou, M.L., and Ahmad, I., *Hong Kong University of Science and Technology*

WAA12-7 **Standards for Multimedia Communications Over the Internet**
Chen, Tsuhan, *Carnegie Mellon University*

WAA12-8 **A Virtual Classroom for Real-Time Interactive Distance Learning**
Chen, F., *Texas Instruments*; Choi, K. H.; Hwang, J.N.; Deshpande, S.; Youn, J., and Sun, M.T., *University of Washington*

WAA12-9 **Fast Browsing of Speech/Audio Material for Digital Library and DIstance Learning**
Au, Oscar, *Hong Kong University of Science and Technology*

WAA13 Digital Filter Design and Implementation – Poster

Professor Y. C. Lim
National University of Singapore

WAA13-1 **Efficient parallel FIR filter implementations using frequency spectrum characteristics**
Parhi, Keshab K., *University of Minnesota*
Chung, Jin-Gyun, *Chonbuk National University*

WAA13-2 **Signed Power-Of-Two(SPT) Term Allocation Scheme For The Design Of Digital Filters**
Lim, Yong-Ching, *National University of Singapore*
Li, S., *Sarnoff Corporation*
Yang, Rui, *National University of Singapore*

WAA13-3 **Peak-Constrained Design of Nonrecursive Digital Filters with Low Passband/Stopband Engergy Ratio**
Netto, Sergio L., *Programa de Engenharia Eletrica*
Diniz, Paulo S., *Federal University of Rio de Janeiro*

WAA13-4 **An Iterative Reweighted Least Squares Algorithm for Constrained Design of Nonlinear Phase FIR Filters**
Lang, Mathias, *Vienna University of Technology*

WAA13-5 **Design of linear phase FIR filters using the nonuniform DCT**

WEDNESDAY – June 3, 1998 (Morning)

Okuda, Masahiro, *Keio University*

WAA13-6 **Optimal fixed-point VLSI structure of a floating-point based digital filter design**
Wu, An-Yeu, *National Central University*

WAA13-7 **Improved Tuning Accuracy Design of Parallel-Allpass-Structures-Based Variable Digital Filters**
Kawamata, Masayuki and Stoyanov, Georgi, *Tohoku University*

WAA13-8 **Computationally Fast Lattice Bilinear Digital Ladder Filters with Comparison to Circulator WDFs**
Sollander, Magnus and Harnefors, Lennart, *Malardalen University*; Signell, Svante, *Ericsson Radio Systems*
Holmberg, Johnny, *Malardalen University*

WAA13-9 **Design of General-Order Bode-Type Variable-Amplitude Digital Equalizers**
Nowrouzian, Behrouz and Fuller, Arthur, *University of Alberta*

WAA13-10 **A Novel Modified Branch-and-Bound Technique for Discrete Optimization over Canonical Signed-Digit Number Space**
Nowrouzian, Behrouz, *University of Alberta*
Ashrafzadeh, Farhad, and Fuller, Arthur, *University of Alberta*

WAA13-11 **Analytical Guess of Error for Nonlinear FIR Filters to Approximate Linear Phase Response**
Nishihara, Akinori; Fujii, Nobuo, and Yagyu, Mitsuhiko, *Tokyo Institute of Technology*

WAA13-12 **A systematic technique for designing approximately linear phase recursive digital filters**
Saramaki, Tapio A. and Surma-aho, Kimmo, *Tampere University of Technology*

WAA13-13 **Design of very low-sensitivity and low-noise recursive digital filters using a cascade of low-order wave lattice filters**
Yli-Kaakinen, Juha; Saramaki, Tapio A., and Surma-aho, Kimmo, *Tampere University of Technology*

WAA13-14 **Analytucal Design of almost Equiripple FIR Half-Band Filters**
Zahradnik, Pavel, *Czech Technical University*

WAA13-15 **Design and VLSI Implementation of Multirate Filter Banks Based on Approximately Linear Phase Allpass Sections**
Lu, C., and Summerfield, Stephen, *University of Warwick*

WAA13-16 **A Highly-Flexible FIR Processor with Scaleable Dynamic Data Ranges**
Liu, Wei-Lung and Chen, Oscal T.-C., *National Chung Cheng University*.

WAA13-17 **A computationally efficient design of two-band QMF banks based on the frequency sampling approach**
Gandhi, Rajeev and Mitra, Sanjit K., *University of California – Santa Barbara*

WAA13-18 **Low Power Implementation of Linear Phase FIR Filters for Single Multiplier CMOS Based DSPs**
Erdogan, Ahmet T. and Arslan, Tughrul, *Cardiff University of Wales*

WAA13-19 **Automated Design of Low Complexity FIR Filters**
Bull, David R. and Redmill, David, *University od Bristol*

WAA13-20 **Architecture of a programmable FIR filter co-processor**
Gay-Bellile, Olivier and Dujardin, Eric, *Laboratoires d'Electroniques Philips*

WAA13-21 **Variable 1-D Digital Filter Designs Using Vector Array Decomposition**
Deng, Tian-Bo, *Toho University*

WAA13-22 **Digital Hilbert Transformer Composed of Identical Allpass Subfilters**

Johansson, Håkan and Wanhammar, Lars, *Linköping University*

WAA13-23 **Data Block Processing for Low Power Implementation of Direct Dorm FIR Filters on Single Multiplier CMOS Based DSPs**
Erdogan, Ahmet T. and Arslan, Tughrul, *Cardiff University of Wales*

WAA13-24 **Constrained Genetic Algorithm Design Of Finite Presision FIR Linear Phase Raised Consine Filters**
Somerset, W.P.; Moniri, M., and Al-Hashimi, Bashir, *Staffordshire University*

WAA14 VLSI Architectures, Algorithms and CAD – Poster

Professor Ken Suyama, *Columbia University*

WAA14-1 **Accuracy Analysis of Layout Parasitric Extraction Based on Boolean Methods**
Brambilla, Angelo, *Dipartimento di Elettronics e Informazione*

WAA14-2 **Hardware efficient transform designs with cyclic formulation and subexpression sharing**
Jen, Chein-Wei, *National Chiao Tung University*

WAA14-3 **A Field Programmable Gate Array Chip with Hierarchical Inderconnection Structure**
Lai, Yen-Tai, *National Cheng Kung University*

WAA14-4 **Low-Energy Programmable Finite Field Datapath Architectures**
Parhi, Keshab K. and Song, Leilei, *University of Minnesota*

WAA14-5 **The LEMMA Developer's Toolbox: Semi-Automated Test Development for Analog and Mixed-Signal Circuits**
Kennedy, Michael P., *University College Dublin*; Wrixon, Adrian, *University of California at Berkeley*; O'Donnell, John; Grogan, Paul, and O'Dwyer, Tom, *Analog Devices*

WAA14-6 **An High Speed VLSI Architecture for Scaled Residue to Binary Conversion**
Lojacono, Roberto; Re, Marco, and Cardarilli, Gian Carlo, *Univ. of Rome "Tor Vergata"*

WAA14-7 **VLSI Implementation of Phong Shader in3D Graphics**
Sin, Hyun Chul; Lee, Jin Aeon, and Kim, Leesup, *Korea Advanced Institute of Science and Technology*

WAA14-8 **State Encoding for Low Power Embedded Controllers**
Sciuto, Donatella, *Politecnico di Milano*
Silvano, Cristina and Daldoss, Lidia, *Università di Brescia*

WAA14-9 **Design of the Scan Line Image Processor Chip**
Sunwoo, Myung H., *Ajou University*

WAA14-10 **An Efficient Programmable 2-D Convolver Chip**
Eun, Seyoung and Sunwoo, Myung H., *Ajou University*

WAA14-11 **Synthesis of Folded Multi-Dimensional DSP Systems**
Sundararajan, Vijay, *University of Minnesota, Twin Cities Campus*; Parhi, Keshab K, *University of Minnesota*

WAA14-12 **Low Power Scheduling with Resources Operating at Multiple Voltages**
Chakrabarti, Chaitali and Shiue, Wen-Tsong, *Arizona State Univ.*

WAA14-13 **A CPLD Design of a Self-Organizing System for Data Clustering**
Miyanaga, Yoshikazu; Ohkubo, Jun'ya, and Tochinai, Koji, *Hokkaido University*

WAA14-14 **High Performance Cell for Solving Field Problems Using Resistive Grid Methodestive**
Carneiro, Noel F. Carlos, *University of, New Mexico State*
Ramirez-Angulo, Jaime, *University of, New Mexico State*

WAA14-15 **CORDIC-based derotator**
Nahm, Seunghyeon; Ahn, Youngho, and Sung, Wonyong, *Seoul National University*

WAA14-16 **Theoretical Estimation of Power Consumption in Binary Adders**
Freking, Robert A. and Parhi, Keshab K., *University of Minnesota*

WAA14-17 **Implementation of the fuzzy ART neural network for fast clustering of radar pulses**
Savaria, Yvon, *Ecole Polytechnique de Montreal*
Blaquiere, Yves, *Universite du Quebec a Montreal*
Granger, Eric, *Ecole Polytechnique de Montreal*
Lavoie, Pierre, *Defense Research Establishment Ottawa*
Cantin, Marc-Andre, *Universite du Quebec a Montreal*

WAA14-18 **Neural Core Module for Embedded Intelligence**
Diepenhorst, Marco; TerHaseborg, Henrickus; Nijhuis, Jos, and Spaanenburg, Ben, *University of Groningen*

WAA14-19 **A do-it-yourself methodolgy for CMOS transistor mismatch characterization**
Linares-Barranco, Bernabe and Serrano, Teresa, *National Microelectronics Center*

WAA14-20 **Self-Calibrating Clock Distribution with Scheduled Skews**
Liu, Wentai, *North Carolina State University*

WAA14-21 **Array Architecture and Design for Image Window Operation Processing ASICs**
Kunieda, Nobuyuki, *Saitama University;* Isshiki, Tsuyoshi, *Tokyo Institute of Technology*; Jiang, Hsin-Chin, *Institute of Electronics, National Chiao-Tung Univ.*; Li, Dongju, *Tokyo Institute of Tech.*

WAA14-22 **Novel Digital-Serial systolic Array Implementation of Euclid's Algorithm for Division in GF(2)**
Wang, Chin-Liang and Guo, Jyh-Huei, *National Tsing Hua University*

WAA14-23 **VLSI Architecture of DIvider for Finite Field GF(2)**
Wei, Shyue-win, *Chung-Hua University*

WAA14-24 **An Improved Memory-Based Archicture for Very High Throughput Variable Length Decoder**
Shieh, Bai-Jue; Lee, Yew-San; and Lee, Chen-Yi, *National Chiao Tung University*

WAA15 CAD II - Poster

Professor Ibrahim Hajj
Univeristy of Illinois, Urbana-Champaign

WAA15-1 **A Matlab based tool for bandpass continuous-time sigma-delta modulators design**
Benabes, Philippe; Aldebert, Patrick, and Kielbasa, Richard, *SUPELEC*

WAA15-2 **Optimization of BICMOS Fully Differential OTA's Gain-Bandwidth and Comparison with CMOS Technology**
Loumeau, P.; Rachid, Bouchakour, and Recoules, H., *Telecom Paris*

WAA15-3 **Analysis of Modulator circuits based on Multi-dimensional Fourier Transformation**
Yamagami, Yoshihiro; Ushida, Akio, and Nishio, Yoshifumi, *Tokushima University*

WAA15-4 **Joint Optimization of Multiple Behavioral and Implementation Properties of Analog Filter Designs**
Evans, Brian L., *The University of Texas at Austin*
Tosic, Dejan V. and Lutovac, Miroslav D., *University of Belgrade*
Damera-Venkat, Niranjan, *The University of Texas at Austin*

WAA15-5 **New Description Language and Graphical User Interface for Module Generation in Analog Layouts**
Schulze, Jens, *Robert Bosch GmbH;* Kleine, Ulrich and Wolf,

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Markus, *Otto-von-Guericke University of Magdeburg*

WAA15-6 **Analysis and Compensation of OTA non-ideal Effects in Video Frequency CMOS sinc(x) Equalizers**
Al-Hashimi, Bashir; Dudek, Frank, and Moniri, Mansour, *Staffordshire University*

WAA15-7 **Adjoint network of periodically switched linear circuits**
Yuan, Fei and Opal, Ajoy, *University of Waterloo*

WAA15-8 **Layout Driven Macromodel of an Operational Amplifier**
Franca, Jose E. and, Chung-Yuk, Or, *The Chinese University of Hong Kong*

WAA15-9 **On the Algebraic Reuse of Hardware Design**
de Melo, Ana Cristina V., *University of Sao Paulo*

WAA15-10 **Assessing the uniquness of the dc solutions by tearing of cactus graphs via detection of hinging structures**
Sarmiento-reyes, A., *Instituto Nacional de Astrofisica*

WAA15-11 **On the High Lever Canonical Representation of Piecewise Linear Functions**
Desages, Alfredo; Agamenno, Osvaldo, and Julian, Pedro, *Universidad Nacional del Sur*

WAA15-12 **Hierarchical symbolic analysis of large analog circuit with determinant decision diagrams**
Shi, C.J. Richard and Tan, Xiangdong, *University of Iowa*

WAA15-13 **Reducing Operation Complexity in Symbolic Techniques through Partitioning**
Camurati, Paolo; Cabodi, Gianpiero, and Quer, Stefano, *Politecnico di Torino*

WAA15-14 **Waveform Approximation Technique in the Switch-Level Timing Simulation BTS**
Chang, Molin and Feng, Wu-Shiung, *National Taiwan University*
Chen, Pei-Yin, *National Cheng Kung Univ.*
Wang, Michelle, *University of Southern California*

WAA15-15 **A New and Efficient Method for the Multitone Steady-state Circut Simulation**
Bolcato, P.; Larcheveque, R., and Ngoya, E., *University de Limoges*

WAA15-16 **Generalized Centers of Gravity Algorithm for Yield Optimization of Integrated Circuits**
Keramat, Mansour and Kielbasa, Richard, *Ecole Superieure d'Electricite (SUPELEC)*

WAA15-17 **Statistical Design of Integrated Circuits Using Maximum Likelihood Estimation of the Covariance Matrix**
Seifi, Abbas, *University of Waterloo*

WAA15-18 **Modeling the Dynamic Behavior of Series-Connected MOSFETs for Delay Analysis of Multiple-Input CMOS Gates**
Bisdounis, Labros and Koufopavlou, Odysseas, *VLSI Design Laboratory*

WAA15-19 **A New Curve Fitting Technique for Analysis of Frequency-Dependent Lossy Transmission Lines**
Ushida, Akio; Tanji, Yuichi, and Nishio, Yoshifumi, *Tokushima University*

WAA15-20 **Two-Pole Approximation for High Speed Interconnect Design**
Chen, Richard and Shao, Jianhua, *City University of Hong Kong*

WAA15-21 **Analysis of Interconnected Lumped Distributed Multi-Branch Multi-Stage Networks**
Sakagami, Iwata, *Muroran Institute of Technology*

WAA15-22 **Precorrected-DCT Techniques for Modeling and Simulation of Substrate Coupling in Mixed-Signal IC's**
Silveira, Luis and Costa, Joao P., *Instituto Superior Tecnico/INESC*; Chou, Mike, *Massachusetts Institute of Tech.*

WEDNESDAY – June 3, 1998 (Morning)

WAA15-23 **Analysis of the Transistor Chain Operation in CMOS Gates for Short Channel Devices**
Chatzigeorgiou, Alexander N. and Nikolaidis, Spyridon, *Aristotle University of Thessaloniki*

WAA15-24 **Delay and Power Estimation for a CMOS Inverter Driving RC Interconnect Loads**
Kyriakis-Bitzar, Eystathios, *NCSR "Demokritos"*
Nikolaidis, Spyridon and Chatzigeorgiou, Alexander N., *Aristotle University of Thessaloniki*

WEDNESDAY – June 3, 1998 (Late Morning)

WAB6 DSP Architectures -Lecture

Professor Herschel H. Loomis, Jr.
Naval Postgraduate School

WAB6-1 **General Data-Path Organization of a MAC unit for VLSI Implementation of DSP Processors**
Farooqui, Aamir A. and Oklobdzija, Vojin G., *UC-Davis*

WAB6-2 **Nonlinear DSP Coprocessor Cells-One and Two Cycle Chips**
Jain, Vijay K., *University of South Florida*
Lin, Kuang, *Thomson Multimedia*

WAB6-3 **GAA: A VLSI Genetic Algorithm Accelerator with On-the-Fly Adaptation of Crossover Operators**
Hatta, Koichi; Wakabayashi, Shin'ichi; Nakayama, Yoshikatsu; Koide, Tetsushi; Toshine, Naoyoshi, and Goto, Mutsuaki, *Hiroshima University*

WAB6-4 **VLSI Implementation of a DWT Architecture**
Chen, Po-Yueh, *University of Maryland*
Acharya, Tinku, *INTEL Corporation*

WAB7 Dig. Tech. for Improving Delta-Sigma ADCs - Special

Professor Gabor C. Temes, *Oregon State University*

WAB7-1 **An Improved Individual Level Averaging Approach Towards Multi-Bit Sigma-Delta Modulator**
Leung, B., *U. of Waterloo*; Chen, F., *Texas Instruments*

WAB7-2 **A Reduced-Complexity Mismatch-Shaping DAC for Delta-Sigma Data Converters**
Jensen, H.T.; Fogleman, E., and Galton, Ian, *UC San Diego*

WAB7-3 **Linear Digital Calibration of Pipelined Nyquist-Rate and Multi-Bit Oversampled A/D Converters**
Cauwenberghs, Gert, *John Hopkins University*

WAB7-4 **Adaptive Compensation of Analog Circuit Imperfections for Cascaded Delta-Sigma ADCs**
Sun, Tao and Temes, Gabor C., *Oregon State University*
Wiesbauer, A., Technical University of Vienna

WEDNESDAY – June 3, 1998 (Afternoon)

WPA1 Wavelets: Implementation and Application - Lecture

Professor Truong Nguyen, *Boston University*

WPA1-1 **Nonstationary Signal Classification Using Pseudo Power Signatures**
Aravena, Jorge L. and Venkatachalam, Vidya, *Louisiana State University*

WPA1-2 **A Simple Scheme of Decomposition and Reconstruction of Continuous-time Signals by B-splines**
Ichige, Koichi, *University of Tsukuba*; Ishii, Rokuya, *Yokohama National University*; Kamada, Masaru, *Ibaraki University*

WPA1-3 **A VLSI Architecture Design with Lower Hardware Cost and Less Memory for Separable 2-D Discrete Transform**
Liu, Zemin, *Beijing University of Posts and Telecommunications*
Shieh, Ming-Der and Shue, Ming-Hwa, *National Yunlin Univ. of Science & Tech.*

WPA1-4 **Synthesis filter bank with low memory requirrments for image subband coding**
Sundsbo, Ingil and Ramstad, Tor A., *Norwegian University of Science and Technology*

WPA1-5 **Optimal Design of Interpolating Wavelet Transform**
Jiao, LiCheng; Bao, Zheng, and Shui, PengLang, *XiDian University*

WPA1-6 **Semi-recursive VLSI architecture for Two Dimensional Discrete Wavelet Transform**
Kim, Leesup; Paek, Seungkwon, and Jeon, Hyunkyu, *Korea Advanced Institute of Science and Technology*

WPA1-7 **Implementation of 2-Dimensional Wavelet Filters using Parallel Processing Systems based on the TESH Interconnection Network**
Maziarz, Bogdan and Jain, Vijay K., *University of South Florida*

WPA1-8 **Polyphase Adaptive Filter Banks for Subband Decomposition**
Gerek, Omer N. and Cetin, Enis, *Bilkent University*

WPA2 3D Data Modeling and Imaging - Special

Professor Guido Cortelazzo, *University of Padova*

WPA2-1 **Hybrid Modeling for Manufacturing with NURBS and 3D Scanner Data**
Besl, Paul, *Alias-Wavefront, Inc.*

WPA2-2 **Portable Digital 3D Imagining System for Remote Sites**
Bernier, F.; Cournoyer, L.; Blais, F.; Harrison, N., and Beraldin, John A., *Institute for Information Technology*

WPA2-3 **Simple 3D Photography**
Perona, Pietro and Bouguet, Jean-Yves, *California Institute of Technology*

WPA2-4 **Photorealistic Texture Mapping on 3D Surfaces**
Kunt, Murat; Ebrahimi, Touradj, and Jordan, Frederic, *Swiss Federal Institute of Technology*

WPA2-5 **Systems for Disparity-Based Multiple-View Interpolation**
Ohm, Jens-Rainer; Izquierdo, Ebroul, and Mueller, Karsten, *Heinrich-Hertz-Institut*

WPA2-6 **2-D Patterns for 3-D Surface Matching**

Johnson, Andrew E., *Jet Propulsion Laboratory*

WPA2-7 **Object-Based Coding of Stereoscopic and 3D Image Sequences**
Strintzis, Michael G. and Malassiotis, Sotiris, *University of Thessaloniki*

WPA2-8 **Bringing Image-Based Rendering into Mainstream Graphics**
Yu, Yizhou; Debevec, Paul; Borshukov, George, and Malik, Jitendra, *U.C. Berkeley*

WPA2-9 **Frequency Domain Methods for 3D Imaging**
Cortelazzo, Guido, Doretto, Gianfranco, Totaro, Stefano, *University of Padova*

WPA3 Cellular Neural Networks - Lecture

Professor Jacek M. Zurada, *University of Louisville*

WPA3-1 **A Modular gmC Programmable CNN Implementation**
Lim, Drahoslav and Moschytz, George S., *Swiss Federal Institute of Technology*

WPA3-2 **An improved architecturefor the interconnections in a multi-chip CNN system**
Bonaiuto, Vincenzo; Sargeni, Fausto, and Salerno, Mario, *University of Rome "Tor Vergata"*

WPA3-3 **VLSI Delta-Sigma Cellular Neural Network for Analog Random Vector Generation**
Cauwenberghs, Gert, *Johns Hopkins University*

WPA3-4 **On Evolvable Hardware: On-Line Evolution by Cellular Programming**
Nicoletti, Guy, *University of Pittsburgh at Greensburg*

WPA3-5 **An Analysis of CNN Settling Time**
Moschytz, George S. and Haenggi, Martin, *Swiss Federal Institute of Technology*

WPA3-6 **Learning Algorithms for Cellular Neural Networks**
Mirzai, Bahram and Moschytz, George S., *Swiss Federal Institute of Technology*

WPA3-7 **Autowaves for motion control: a CNN approach**
Arena, Paolo; Branciforte, Marco; DiGrazia, Pietro; Branciforte, Marco; Di Grazia, Pietro, and Fortuna, Luigi, *Univ. of Catania*

WPA3-8 **A Time-Multiplexing Simulator for Cellular Neural Network (CNN) Using Simulink**
Sobhy, Mohamed I. and El-Shafel, Ahmed A., *University of Kent at Cantebury, UK*

WPA4 High-Level Synthesis - Lecture

Professor Forrest D. Brewer
University of California at Santa Barabara

WPA4-1 **Parallel Algorithms for Simultaneous Scheduling, Binding and Floorplanning in High-level Synthesis**
Banerjee, Prithviraj, *Northwestern University*
Prabhakaran, Pradeep, *University of Illinois, Urbana-Champaign*

WPA4-2 **A simple Alternative for Storage Allocation in High-level Synthesis**
Aloqeely, Mohammed A, *King Saud University*

WPA4-3 **A New Partitioning Framework for Uniform Clock Distribution During High Level Synthesis**
Maaz, Mohamad B. and Bayoumi, Magdy, *U. of Southwestern Louisiana*

WPA4-4 **A Binding Algorithm for retargetable Compilation to Non-Orthogonal Datapath Architechtures**
Kambe, Takashi, *SHARP Corporation*; Ishiura, Nagisa, *Osaka University*; Yamaguchi, Masayuki, *SHARP Corporation*

WEDNESDAY – June 3, 1998 (Afternoon)

WPA5 Archs., Algors. & Impl. for Wireless Comm. Systems - Special

Professor H. V. Poor, *Princeton University*

WPA5-1 **Creating and Exploiting Diversity in Wireless Systems through Signal Processing**
Wornell, Gregory, *MIT*

WPA5-2 **A Practical Implementation of an Adaptive Wideband Crosspolar Signal Combiner**
Bohannon, John; Harp, Jeff, and Treichler, John, *Applied Signal Technology*

WPA5-3 **Signal Processing Algorithms for Adaptive Interference Suppression**
Poor, H.V, *Princeton University*

WPA5-4 **Low Power Design of a Wideband Spread Spectrum Radio Using Multiuser Detection**
Broderson, Robert, *UC Berkeley*

WPA5-5 **Low-Power Signal Processing for Portable Electronics**
Meng, Teresa, *Stanford University*

WPA5-6 **Design of Low Power Signal Processing Modules for Wireless Applications**
Chandrakasan, Anantha, *MIT*

WPA5-7 **A 1V Programmable DSP for Wireless Applications**
Lee, Wai, *Texas Instruments, Inc.*

WPA5-8 **Low-Power Radio Frequancy Circuit Architechtures for Portable Wireless Communications**
Larson, Larry, *UC San Diego*

WPA6 Topics in Analog & Digital Test - Lecture

Professor Ramesh Harjani, *University of Minnesota*

WPA6-1 **Low Expense Architectures for a Dynamic Spectrum Analyzer Based on SC-Filters**
Fischer, Wolf-Joachim; Kranz, Ernst-Georg, and Marschner, Uwe, *Dresden University of Technology*

WPA6-2 **A Multi-Pass A/D Conversion Technique For Extracting On-Chip Analog Signals**
Hajjar, Ara and Roberts, Gordon, *MACS Laboratory, McGill University*

WPA6-3 **Arbitrary Band-Limited Pulse Generation for Built-In Self-Test Applications**
Dufort, Benoit and Roberts, Gordon, *MACS Laboratory, McGill University*

WPA6-4 **The Effective BIST Scheme for Delay Testing**
Li, Xiaowei and Cheung, Paul Y.S., *University of Hong Kong*

WPA6-5 **Design of Single-Ended SRAM with High Test Coverage and Short Test Time**
Wang, Chua-Chin and Wu, Chi-Feng, *National Sun Yat-Sen Univ*

WPA6-6 **Reducing Power Consumption During Test Application by Test Vector Ordering**
Girard, Patrick, *L.I.R.M.M. / C.N.R.S.*

WPA6-7 **A Simplicial Method for the Simulation of Transistor Shorts in CMOS Logic Gates**
Milor, Linda and Lin, Hung-Jen, *University of Maryland*

WPA6-8 **Artificial Neural Network Based Multiple Fault Diagnosis in Digital Circuits**
Al-Jumah, Abdullah and Arslan, Tughrul, *Cardiff University of Wales*

WPA7 Controlling Bifurcations and Chaos - Special

WEDNESDAY – June 3, 1998 (Afternoon)

Professor Guanrong Chen, *University of Houston*

WPA7-1 **Predicting Period-Doubling Bifurcations in Nonlinear Time-Delayed Feedback Systems**
Chen, Guanrong, *University of Houston*
Berns, Daniel, *Universidad Nacional de la Patagonia*
Moiola, Jorge L., *Universidad Nacional del Sur*

WPA7-2 **Rotating Stall Control via Bifurcation Stabilization**
Zhou, Kemin and Martin, Phillip, *Louisiana State University*
Chen, F., *Texas Instruments*
Gu, Guoxiang, *Louisiana State University*

WPA7-3 **Towards a Bifurcation Theory for Control Systems: Spectral Aspects**
Colonius, Fritz, *Universitat Ausberg*
Kliemann, Wolfgang, *Iowa State University*

WPA7-4 **Bifurcation Analysis and Control of Nonlinear Systems with a Nonsemisimple Zero**
Fu, Jyun-Horng, *Wright State University*

WPA7-5 **Stabilization of a class of Bifurcation via State Feedback**
Fitch, Osa and Kang, Wei, *Naval Postgraduate School*

WPA7-6 **Dynamic Bifurcation Control of Cardiac Dynamics**
Wang, Hua O., *Duke University*

WPA7-7 **Feedback Control of Hopf Bifurcations**
Chen, Guanrong, *University of Houston*

WPA7-8 **Controlling Intermittency in Reaction Diffusion Systems**
Battogtokh, Dorjsuren, *Kyoto University*

WPA8 Current Mode Techniques - Lecture

Dr. Arash Loloee, *Texas Instruments*

WPA8-1 **A 50 MHz 5th Order Elliptic LP-filter Using Current Mode Gm-C Topology**
Koli, Kimmo J.; Kosunen, Marko, and Halonen, Kari A., *Helsinki University of Technology*

WPA8-2 **A Low Mismatch Sensitivity Fully-Balanced Current-Mode Integrator**
Sanchez-Sinencio, Edgar, *Texas A&M University*

WPA8-3 **A CMOS Current-Mode Multiplier/Divider Circuit**
Sanchez-Solano, Santiago; Huertas, Jose L., and Baturone, Iluminada, *Centro Nacional de Microelectronica (CNM)*

WPA8-4 **Sampling jitter in high-speed SI circuits**
Jonsson, Bengt E., *Ericsson Radio Systems AB*

WPA8-5 **The Multiple-Input Translinear Element: A Versatile Circuit Element**
Diorio, Chris, *University of Washington*
Minch, Bradley A., *Cornell University*;
Hasler, Paul E., *Georgia Institute of Technology*

WPA8-6 **Very Low Charge Injection Switched-Current Memory Cell**
Hughes, John B, *Philips Research Laboratories*
Toumazou, Chris and Leelavattananon, Kritsapon, *Imperial College of Science Techology & Medicine*

WPA8-7 **An Improved CMOS Offset-compensated Current Comparator for High Speed Applications**
Worapishet, Apisak, *Imperial College of Science Technology & Medicine*; Hughes, John B, *Philips Research Laboratories*
Toumazou, Chris, *Imperial College of Science Tech. & Medicine*

WPA8-8 **Wideband Current-Mode Absolute Value Circuits**
Porta, S, *Universidad Publica de Navarra*
Hayatleh, K. and Lidgey, F.J., *Oxford Brookes University*

WPA9 Amblifier Building Blocks - Lecture

WEDNESDAY – June 3, 1998 (Afternoon)

Dr. Jose Silva-Martinez, *National Institute for Astrophysics, Optics, and Eng.*

WPA9-1 **Class AB output stages of the integrated amplifiers**
Ivanov, Vadim, *Burr-Brown Corp.*

WPA9-2 **A Current Driven, Programmable Gain Differential Pair Using MOS Translinear Circuits**
Turchetti, C.; Conti, M.; Guaitini, Giovanni, and Orcioni, Simone, *University of Ancona*

WPA9-3 **New high-precision circuits for on-chip capacitor ratio testing and sensor readout**
Temes, Gabor C. and Wang, Bo, *Oregon State University*

WPA9-4 **Very Wide Range Tunable CMOS/bipolar Current Mirror**
Serrano, Teresa and Linares-Barranco, Bernabe, *National Microelectronics Center*

WPA9-5 **Matching Performance of Current Mirrors with Arbitrary Parameter Gradients Through the Active Devices**
Geiger, Randall, *Iowa State University*

WPA9-6 **An Active Tuning and Impedance Matching Element**
Rahkonen, Timo E. and Lapinoja, Mikko, *University of Oulu*

WPA9-7 **Voltage Controlled Resistor for Mismatch Adjustment in Analog CMOS Circuits**
Scott, Tom; Gupta, Sandhya; Sridharan, Sucheendran; Black, William C., and Yu, Baiying, *Iowa State University*

WPA9-8 **Harmonic distortion in CMOS current mirrors**
Bruun, Erik, *Technical University of Denmark*

WPA10 Oversampled and Sigma-Delta Techniques II - Lecture

Professor Phillip E. Pace
Naval Postgraduate School

WPA10-1 **A Bandpass Sigma-Delta Demodulator**
Lyden, Colin and Keady, Aidan, *University College Cork*

WPA10-2 **A 5GHz continuous time Sigma-Delta modulator implemented in 0.4um InGaP/InGaAs HEMT technology**
Miyashita, Takumi, *Fujitsu Laboratories Ltd.*
Charry, Edgar, *Laboratorio de Sistemas Integraveis*
Watanabe, Yuu, *Fujitsu Laboratories Ltd.*
Olmos, Alfredo, *Laboratorio de Sistemas Integraveis*
Nihei, Mizuhisa, *Fujitsu Laboratories Ltd.*

WPA10-3 **A 50-MHz Continuous-Time Switched-Current Sigma-Delta Modulator**
Luh, Louis and Choma, John, *Universuty of Southern California*

WPA10-4 **A Multi-Bit Sigma-Delta Modulator with Interstage Feedback**
Chao, K. S. and Fang, L., *Texas Tech University*

WPA10-5 **Approaches to Simulating Continuous-Time \Sigma\Delta Modulators**
Cherry, James A. and Snelgrove, Martin, *Carleton University*

WPA10-6 **Architectural Coefficient Synthesis for the Implementation of Optimal Higher-Order Delta-Sigma Analog-to-Digital Converters**
Fiez, Terri S. and Naiknaware, Ravindranath, *Washington State Univeristy*

WPA10-7 **Loop Delay and Jitter in Continuous-Time \Sigma\Delta Modulators**
Snelgrove, Martin and Cherry, James A., *Carleton University*

WPA10-8 **Digital Correction of Non-Ideal Amplifier Effects in the MASH Modulator**
Davis, Alan J., *Naval Undersea Warfare Ctr/Univ. of Rhode*

Island; Fischer, Godi, *University of Rhode Island*

WPA11 Device Modeling - Lecture

Professor Kartikeya Mayaram
Washington State University

WPA11-1 **Modeling, Extraction and Simulation of CMOS I/O Circuits under ESD Stress**
Li, Kang, Tag, Li, Ching-han, Tsai, Rosenbaum, E., Kang, S. M. *University of Illinois at Urbana-Champaign*

WPA11-2 **Single-Event Effects in Micromachined PMOSFETs**
Mayaram, Kartikeya; Osman, Ashraf A., and Mojarradi, Mohammad, *Washington State University*

WPA11-3 **A Generalized HSPICE Macro-Model for Pseudo-Spin-Valve GMR Memory Bits**
Das, Bodhisattva and Black, William C., *Iowa State University*

WPA11-4 **Compact SPICE Modeling and Design Optimization of Low Leakage a-Si:H TFTs for Large-Area Imaging Systems**
Nathan, Arokia; Chamberlain, Savaas G., and Rambhatla, Murthy, *University of Waterloo*

WPA11-5 **SPICE Model for Mechanically Stressed Device/Circuit Simulation**
Maier, Christoph H.; Mayer, Michael; Vogt, Rolf; Baltes, Henry, and Steiner, Ralph, *Swiss Federal Institute of Technology*

WPA11-6 **Rapid Extraction of Capacitance in a-Si Imaging Arrays**
Nathan, Arokia and Pham, Hoan H., *University of Waterloo*

WPA11-7 **An Efficent MOS Transistor Charge/Capacitance Model with Continuous Expressions for VLSI**
Jen, Steve; Sheu, Bing, and Kwon, Jay, *University of Southern California*

WPA11-8 **Wavelet-Based Galerkin Method for Semiconductor Devices Simulation**
Chan, Chung-Kei, Thomas *The Chinese University of Hong Kong*

WPA12 Filters and Electronics Circuits - Lecture

Professor Ray Chen, *San Jose State University*

WPA12-1 **Stability of a Continuous-Time State Variable Filter**
Bakken, Tim and Choma, John, *University of Southern California*

WPA12-2 **A new direct digital frequency synthesizer architecture for mobil transcievers**
Ragaie, Hani F. and Hegazi, Emad, *In Shams University*

WPA12-3 **A Second-Order Log-Domain Bandpass Filter for Audio Frequency Applications**
Edwards, R. Timothy and Cauwenberghs, Gert, *Johns Hopkins University*

WPA12-4 **A Theory of Information Network Analyzer PPN**
Watanabe, Hitoshi and Shinomiya, Norihiko, *Soka University*

WPA12-5 **CMOS Precision Half-Wave Rectifying Transconductor**
Jun, Sibum, *Pohang University of Science and Technoloy*

WPA12-6 **Analysis of Limit-Cycle Oscillations in a Log-Domain Filter**
Ferrer, Enrique, *Motorola, Inc.*
Fox, Robert, *University of Florida*

WPA12-7 **Large Signal Models for Oscillator Design**
Kukk, Vello, *Tallinn Technical University*

WPA12-8 **An Approximate Analytical Approach for Predicting Period-Doubling in the Colpitts Oscillator**
Gilli, Marco, *Politecnico di Torino*; Maggio, Gian Mario and Kennedy, Michael P., *University College Dublin*

WEDNESDAY – June 3, 1998 (Afternoon)

WPA13 Multimedia/Communications - Poster

Professor Tsuhan Chen
Carnegie Mellon University

WPA13-1 **Low Complexity Equalization for Cable Modems**
Lemonds, Carl; Wolf, Tod D., and Gatherer, Alan, *Texas Instruments Inc.*

WPA13-2 **A Consideration on the Computational Requirements of Blind Equilization Using the Orthogonal Project**
Furukawa, Toshihiro, *Fukuoka Institute of Technology*
Matsumoto, Hiroki, *Maebashi Institute of Technology*
Kitaoka, Yoshihiro, *Fukuoka Institute of Technology*

WPA13-3 **Four step genetic search for block motion estimation**
So, Man F. and Wu, Angus, *City Universtiy of Hong Kong*

WPA13-4 **A Novel MPEG Audio Degrouping Algorithm**
Chen, Liang-Gee and Tsai, Tsung-Han, *National Taiwan Univ.*

WPA13-5 **A Robust Algorithm for Formant Frequency Extraction of Noisy Speech**
Shimamura, Tetsuya; Zhao, Qifang, and Suzuki, Jouji, *Saitama University*

WPA13-6 **Realization of multiwavelet-based transform kernels for image coding**
Rieder, Peter; Nossek, Josef A., and Schimpfle, Christian V., *Technical U. of Munich*

WPA13-7 **Asynchronous VLSI Architectures for Huffman Codecs**
Sauerwein, Helmut and Hauck, Oliver F., *Darmstadt University of Technology*

WPA13-8 **A Perceptual Based Rate Control Scheme For MPEG-2**
Chan, S.C, *The University of Hong Kong*

WPA13-9 **Fast Time Scale Modification Using Envelope-Matching (EM-TSM)**
Wong, Wai Chuen and Au, Oscar, *The Hong Kong University of Science and Technology*

WPA13-10 **Performance Study of Time Delay Estimation in a Room Environment**
Kot, Alex C.; Er, Meng H., and Jian, Ming, *Nanyang Technological University*

WPA14 Neural Networks - Poster

Professor Mona Zaghloul
George Washington University

WPA14-1 **Low Complexity CMOS Array for Approaching Assignments**
Candenas, Jose A.; Nava, Luis, and Castaneda, Felipe, *CINVESTAV-IPN*

WPA14-2 **An Artificial Model for Biological Computation and Control for a Locomotion System**
Wooten, E. Curran K., *U. S. Naval Academy*
Newcomb, Robert, *University of Maryland*

WPA14-3 **An efficient method of automatical feature extraction and target classification**
Jiao, LiCheng and Zhang, Ynning, *Xidian University*

WPA14-4 **Pseudorandom Generator based on Clipped Hopfield Neural Network**
Cheng, L.M. and Chan, Chi-Kwong, *City Univ. of Hong Kong*

WPA14-5 **Global Stability of a Larger Class of Dynamical Neural Networks**
Arik, sabri, *Istanbul University*

WPA14-6 **Hardware Realization of a Hamming Neural Network with On-Chip Learning**

Leblebici, Yusuf and Schmid, Alexandre, *Swiss Federal Institute of Technology (EPFL)*

WPA14-7 **Car plate recognition by neural networks and image processing**
Orlandi, Gianni; Di Claudio, Elio D.; Parisi, Raffaele and Lucarelli, Gabriele, *University "La Sapienza"*

WPA14-8 **Architecture and design methodology of the RBF-DDA neural network**
Mehrez, Habib and Aberbour, Mourad, *LIP6/CAD-VLSI Lab. University of Paris 6*

WPA14-9 **Hardware implementation of post retinal processing using analog VLSI circuits**
Akers, Lex A., *University of Texas at San Antonio*
Satakopan, S. and James, S., Arizona State University

WPA14-10 **High Performance Programmable Bi-Phase Pulse Generator Design for a Cochlear Speech Processor**
Ay, Suat; Zeng, Fan-Gang, and Shue, Bing, *USC*

WPA14-11 **Pulse Stream based CNN Hardware Implementation**
Colodro, Francisco, *Escuela Superior de Ingenieros*

WPA14-12 **Design of Cellular Neural Networks with Space-Invariant Cloning Template**
Liu, Derong, *Stevens Institute of Technology*
Lu, W. S, *University of Victoria*

WPA14-13 **On the Stability of CNN's with continuous time delay**
Liao, Xiaofeng and Yu, Juebang, *University of Electronic Science and Technology*; Wang, Michelle, *Univ. of Southern California*

WPA14-14 **Synthesis of a recurrent double-layer transistor network for early-vision tasks**
Nazzaro, Antonio; Barbaro, Massimo, and Raffo, Luigi, *University of Cagliari*

WPA14-15 **Harmonic Retrieval Using Higher-Order Statistics and Hilbert Transform**
Zemin, Liu and Shenghong, Li, *Beijing University of Posts and Telecommunications*

WPA14-16 **Segmentation Coding for Object-Based Attentive Selection Systems**
Wilson, Charles S., *Georgia Institute of Technology*
Morris, Tonia G., *Intel Corporation*
DeWeerth, Stephen P., *Georgia Institute of Technology*

WPA14-17 **Current-Mode Truth Value Evaluation Circuits for Complementary Fuzzy Logic Systems**
Yu, Gwo-Jeng; Chen, Chuen-Yau, and Liu, Bin-Da, *National Cheng Kung University*

WPA14-18 **A Hybrid Fuzzy Neural Decoder for Convolutional Codes**
Wu, C., *City University of Hong Kong*; Zhu, Wei-Ping, *Univ. of Elec Sci Tech.*; Nakamura, Shogo, *Tokyo Denki University*

WPA14-19 **A New Edge-Preserving Smoothing Filter Based on Fuzzy Control Laws and Local Features**
Wada, Yuji; Hinamoto, Takao, and Muneyasu, Mitsuji, *Hiroshima University*

WPA14-20 **Current-Mode Circuit to Realize Fuzzy Classifier with Maximum Membership Value Decision**
Tsao, Ju-Ying; Chen, Chuen-Yau, and Liu, Bin-Da, *National Cheng Kung University*

WPA14-21 **A novel Cmos analogue fuzzy inference processor**
Song, Peter C.; Quigley, Steven F., and Pammu, Sridhar, *University of Birmingham*

WPA14-22 **Mixed-Mode VLSI Implementation of Fuzzy ART**
Abshire, Pamela A.; Cohen, Marc H., and Cauwenberghs, Gert, *Johns Hopkins University*

WPA14-23 **Cellular Nonlinear Network for Digital Error Correction**
Kananen, Asko; Paasio, Ari, and Halonen, Kari A, *Helsinki*

University of Technology

WPA14-24 **A Fuzzy reasoning bases approach for ARMA order selection**
Kitajima, Hideo; Emura, Masafumi, and Haseyama, Miki, *Hokkaido University*

WPA15 Analog Circuits and Systems - Poster

Professor Todd R. Weatherford
Naval Postgraduate School

WPA15-1 **7 Gbit/s Measurements on a 0.8 mm CMOS Line-Receiver**
Johansson, Henrik O., *Linköping University*

WPA15-2 **AlGaAs/GaAs HEMT 5-12GHz integrated system for an optical receiver**
Charry, Edgar; Olmos, Alfredo, and Reina, Rodrigo, *Laboratorio de Sistemas Integraveis*

WPA15-3 **Multiple 1:N Interpolation FIR Filter Design Based on a Single Architecture**
Kang, In and Yeon, Kwang-Il, *ETRI*

WPA15-4 **VLSI Architectures for weighted order-statistic filters**
Lucke, Lori, *Minnetronix Inc.*

WPA15-5 **Analog CMOS design of the incremental credit assignment scheme....**
Siskos,S.; Vlassis, S.; Hatzopoulos, Alkis A., and Petrides, Kehapious V., *Aristotle University of Thessaloniki*

WPA15-6 **MOSFET Stair-Shaped I-V Circuit and Applications**
Jun, Sibum, *Pohang University of Science and Technoloy*

WPA15-7 **Statistical Design of a Low-Voltage Square-Law CMOS Cell**
Tarim, Tuna B. and Ismail, Mohammed, *Ohio State University*

WPA15-8 **A Novel Digitally Controlled CMOS Current Follower for Low Voltage Low Power Applications**
Elwan, Hassan and Ismail, Mohammed, *The Ohio State University*

WPA15-9 **An Analytical salution to a Class of Oscillators and Its Application to Filter Tuning**
Pavan, Shanthi and Tsividis, Yannis, *Columbia University*

WPA15-10 **A High Precision Current Minnor/Devider**
Friedman, Eby G., *University of Rochester*

WPA15-11 **Active Capacitance Multipliers Using Current Conveyors**
Di Cataldo, G., *University of Catiana*

WPA15-12 **A (+/-) 1.5V CMOS four-quaudrant analog multiplier using 3GHz Analogue Squaring Circuits**
Hong, Wei, *Thomson Multimedia*
Li, Simon, *National Yunlin University of Science and Tech*
Lin, Kuang, *Thomson Multimedia*

WPA15-13 **An Autozeroing Floating-Gate Second-Order Filter**
Stanford, Theron, *California Institute of Technology*
Diorio, Chris, *University of Washington*
Hasler, Paul E., *Georgia Institute of Technology*
Minch, Bradley A., *Cornell University*

WPA15-14 **Design Phase Equalizers Using Phase Delay Characteristic**
Noceti Filho, Sidnei; Carvalho, Delmar B., and Seara, Rui, *LINSE/EEL/CTC/Federal &University of Santa Catarina*

WPA15-15 **High-speed D/A converter using resonant tunneling diodes**
Chren, William A., *Grand Valley State University*

WPA15-16 **New Switched-Current Circuits for Nonlinear Signal Processing**
Zeng, Xuan and Tang, PuShan, *Fudan University*
Tse, C.K., *Hong Kong Polytechnic University*

WEDNESDAY – June 3, 1998 (Afternoon)

WPA15-17 **A replica biasing for constant-gain open-loop amplifiers**
Palmisano, Giuseppe and Salerno, R., *Universita di Cantania*

WPA15-18 **Switched-capacitor impedance simulation circuits realized with current conveyor**
Ono, Toshio, *Saitama institute of technology*

WPA15-19 **A Simple CMOS Digital Controlled Oscillator with high resolution and linearity**
To, Cheuk-Him and Chan, Cheong-Fat, *The Chinese University of Hong Kong*

WPA15-20 **On Optimizing Micropower MOS Regulated Cascode Circuits on Switched Current Techniques**
De Lima, J.A., *Universidade Estadual Paulista*

WPA15-21 **Elimination of nonlinear clock feedthrough in component-simulation switched-current circuits**
de Queiroz, Antonio Carlos and Schechtman, Jones, *Universidade Federal do Rio de Janeiro*

WPA15-22 **Analog Building Blocks for a Sampled Data Fast Wavelet Transform CMOS VLSI Implementation**
Ramirez-Angulo, Jaime, and Gonzalez- Altamiran, Gerardo, *New Mexico State University*

WPA15-23 **An Area Efficient Time-Interleaved Parallel Delta-Sigma A/D Converter**
Eshraghi, Aria and Fiez, Terri S., *Washington State University*

WPA15-24 **Program Delivery Control with On-Screen Display**
Lee, Chew Peng, *Siemens Components Pte Ltd*
Abler, Michael, *Siemens Semiconductor, Siemens AG*

WPB4 Field Programmable Gate Arrays - Lecture

Professor Sachin Sapatnekar
University of Minnesota

WPB4-1 **Using PLAs to design Universal Logic Modules in FPGAs**
Wong, Martin and Lee, Kok Kiong, *University of Texas at Austin*

WPB4-2 **FPGA Mapping of Sequential Circuits with Retiming**
Shragowitz, Eugene, *University of Minnesota*
Lee, Jun-yong, *Hong-ik University*

WPB4-3 **RAISE: A Detailed Routing Algorithm for SRAM Based Field-Programmable Gate Arrays using Multiplexed Switches**
Baena, Vicente; Torralba, Antonio, and Aguirre, Miguel Angel, *Escuela Superior de Ingenieros*; Faura, Julio, *Sidsa*
Franquelo, Leopoldo G., *Escuela Superior de Ingenieros*

WPB4-4 **Rapid Prototype of a Fast Data Encryption Standard With Integrity Processing for Cryptographic Applications**
Bouaziz, Samir, *Universite' Paris XI*
Guendouz, Hassina, *Ecole Centrale d' Electronique-ECE*

WPB13 Circuits and Systems for Communication Networks II - Poster

Professor Joseph Kahn
University of California, Berkeley
Dr. Chung-Sheng Li

WEDNESDAY – June 3, 1998 (Afternoon)

IBM T. J. Watson Research Center

WPB13-1 **Compile-time Priority Assignment and Re-routing for Communication Minimization in Parallel Systems**
Surma, David R.; Kogge, Peter, and Sha, Edwin, *University of Notre Dame*

WPB13-2 **A VLSI Design of Dual-Loop Automatic Gain Control for Dual-Mode QAM/VSB CATV Modem**
Shiue, Muh-Tian and Chorng-kuang, Wang, *National Central University*

WPB13-3 **Routing Multipoint Connection in Computer Networks**
Zemin, Liu and Wensheng, Sun, *Beijing University of Posts and Telecommunications*

WPB13-4 **Dynamic Routing Algorithms in ATM Networks**
Liu, Zemin and Feng, Gang, *Beijing University of Posts and Telecommunications*

WPB13-5 **A New Memory Controller for the Shared MultiBuffer ATM Switch with Multicast Functions**
Hsieh, Chih-Yuan and Chang, Robert, *National Chung-Hsing University*

WPB13-6 **Scheduling Algorithm for Rusing Dynamic Weighted Round Robineal-time Burst Traffic**
Kwon, Taeck-Geun; Lee, Sook-Hyang, and Rho, June-Kyung, *LG Information & Communications, LTD.*

WPB13-7 **Design and Implementation of an ATM Segmentation Engine with PCI Interface**
Jun, JongArm; Kim, Chan, and Lee, KyouHo, *Electronics and Telecommunications Research Inst.*

WPB13-8 **A Novel Neural Estimator for Admission Control and Buffer Design in ATM Network**
Liu, Zemin and Zhang, Liang, *Beijing University of Posts & Telecommunications*

WPB13-9 **Motion-based Lost Packet Recovery in RTSP H.263 Video**
Kuo, C.-C.J. and Chung, Yon J., *Univ. of Southern California*

WPB13-10 **A transmitting and receiving method for CDMA communications over Electrical Power Lines**
Okazaki, Hideaki, *Gifu National College of Technology*

WPB13-11 **Network Design and Control For Multipoint-to-Multipoint Communications**
Kinoshita, Kazuhiko, *School of Engineering*
Murakami, Koso, *Osaka University*
Soeda, Junichiro, *Matsushita Electric Industrial Co., LTD*
Takine, Tetsuya, *School of Engineering*
Yamai, Nariyoshi, *Osaka University*

WPB13-12 **A Multi-rate Channelized Wireless LAN System with Fixed Channel Assignment**
Lam, Chi-Wai and Ko, Tsz-Mei, *Hong Kong University of Science and Technology*

WPB13-13 **Base station selection algorythems in microcellular mobil radio networks**
Nofal, Mostafa, *Faculty of electronic engineering*

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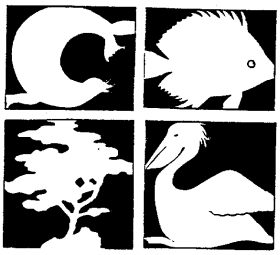
1998 IEEE International Symposium on

CIRCUITS AND SYSTEMS

May 31 - June 3, 1998
Monterey, California
http://www.iscas.nps.navy.mil



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C/O Prof. John Ciezki, Code EC/Cy
Dept. of Electrical &Computer Eng.
Naval Postgraduate School
Monterey, CA 93943-5121

Registration may also be completed at the ISCAS '98 Web Site: http://www.iscas.nps.navy.mil

All registrants are responsible for making their own hotel arrangements. Indicate your hotel accommodations:
( ) Marriott / Doubletree
( ) Other (please list):_____

(2) Or FAX to: (408) 656-5074

SECTION A: Attendee Information

Mr./ Ms./ Dr. /Prof. First Name:_____ Last Name:_____

Affiliation:_____

Address:_____

City:_____ State / Province:_____

Post / ZIP Code:_____ Country:_____

Telephone:_____ FAX:_____

E-mail:_____

( ) Author / Co-Author ( ) Steering Committee ( ) Invited Speaker ( ) Session Chair ( ) General Attendee

Paper Number(s) to be presented by this registrant:_____

SECTION B: Registration Fee Schedule

Check	Category	Before 4/15/98	After 4/15/98
( )	IEEE Member	$450	$500
( )	Non-IEEE Member	$530	$580
( )	IEEE Life Member / Student[1]	$140	$180
( )	One-Day Fee[2]	$200	$230

IEEE Member #:_____

[1]Student (Must provide proof of student status.)

[2]Not for author/presenter.

Registration Fee: $_____

- Authors of papers exceeding 4 pages must pay an extra page cost of $100 / page.

Extra Pages:_____ Additional Page Charge: $_____

- All registration except student and one-day include one ticket for the banquet on June 2. Additional tickets cost $60 each.

Extra Tickets:_____ Additional Ticket Charge: $_____

TOTAL PAYMENT SECTION B: $_____

SECTION C: Tutorial Programs

Disclaimer: If insufficient enrollment, the course will be canceled and you will be refunded during the conference.

Category	Before 4/15/98	After 4/15/98
Full-Day Tutorial Fee	$250	$300
Half-Day Tutorial Fee	$150	$200

( ) Full-Day Tutorial Course #:_____ $_____

( ) Morning Half-Day Tutorial Course #:_____ $_____

( ) Afternoon Half-Day Tutorial Course #:_____ $_____

TOTAL PAYMENT SECTION C: $_____

SECTION D: Conference Records

Note: All conference registrations (excluding One-Day registrations) include one copy of the proceeding on a CD-ROM.

Check	Category	Before 4/15/98	After 4/15/98
( )	Full Printed Proceedings	$150	$180
( )	Extra CD-ROM	$50	$60
( )	Single Volume Cost[3]	$30	$40

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[3]Please indicate quantity in appropriate box(es).

TOTAL PAYMENT SECTION D: $_____

SECTION E: Day Tours

Disclaimer: If insufficient enrollment, the tour will be canceled and you will be refunded during the conference.

Day Tour[4]	Price / Ticket	# of Tickets	Cost
• Point Lobos/Big Sur Tour - 1 June 1998	$50	_____	$_____
• Steinbeck/Wine Tasting Tour - 2 June 1998	$65	_____	$_____
• Carmel/Monterey Shopping Tour - 3 June 1998	$45	_____	$_____

[4]Please register early because tickets will cost more after 11 May 1998.

TOTAL PAYMENT SECTION E: $_____

SECTION F: Payment of Fees

Note: Payment must be drawn on US banks in US dollars ONLY. All checks and money orders must arrive ON or BEFORE the prescribed deadline. If not received by the prescribed deadline, the next rate will apply.

( ) Check or money order payable to ISCAS '98

( ) Please charge the following credit card[5]:

❒VISA ❒MasterCard ❒American Express

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Expiration Date:_____

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([5]Name / Address on card MUST match the attendee information.)

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TOTAL PAYMENT SECTION D: $_____

TOTAL PAYMENT SECTION E: $_____

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ISCAS '98

Hotel Reservation Form

The International Symposium on Circuits and Systems May 31 - June 3, 1998

Your registration must be received by April 30th, 1998 or until the contracted room block is full to ensure ISCAS special rates. Reservations received after that date will be on availability.

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Please mail or FAX this form to either hotel preference address above or reserve your room by telephone. All rooms are subject to a 10% occupancy tax. Reservations must be accompanied by a deposit for the first night plus 10% tax. Check-in time is 3:00 PM and check-out time is 12:00 noon. Deposit is refundable if hotel is notified 24 hours prior to arrival.

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City: _____
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Zip Code: _____ Phone: _____

Marriott Single ($126) _____ Double ($126)_____
Doubletree Single ($126) _____ Double ($126)_____ Add. Person ($20) ____

Arrival Date: _____ Departure Date:_____ Est. Arrival Time: _____

Please check: ❑ Non-Smoking ❑ Smoking ❑ King bed ❑ Handicap requirements
❑ Sharing room with _____ Special Requests _____
❑ Enclosed is a check or money order for $ _____ (Room charge plus tax)
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Call for Participation

1st IEEE-CAS Workshop on Wireless-Communication Circuits and Systems

June 22-24, 1998, Hotel Palace, Lucerne, Switzerland

In an effort to apply the vast expertise of the CAS-Society in the area of circuit and system design to the rapidly growing field of wireless communications, a workshop devoted to this theme will be held at the Hotel Palace in Lucerne, Switzerland, from June 22 to 24, 1998. The workshop will combine presentations by invited experts in the field from academia and industry, with panel and informal discussions. Please see
http://www.isi.ee.ethz.ch/workshop98/

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For details and registration, please contact:

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